FACTORS AFFECTING THE DEMAND FOR HEALTH SERVICES IN THE PHILIPPINES

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I. INTRODUCTION

There is a growing concern among researchers and policy makers about demand for health care. Reflective of this concern are such questions as: (a) Are the economic factors that affect demand for health care services as significant as the non-economic factors? (b) How responsive is demand for health care services to changes in the price of health care? (c) How does this responsiveness vary across income classes?

The first question addresses the issue of access. It can be pursued by investigating such factors as income, travel cost, education, location, and gravity of illness.

The second question relates to financing--in particular, to user fees. Overburdened tax systems of governments may be relieved by applying user fees. This could generate greater revenue, which in turn could free resources to underfunded programs. If a percentage increase in the price of health care results in greater proportionate reduction in utilization, then the total revenue that could be generated may probably decline. On the other hand, if a percentage increase in the price results in less than proportionate reduction in utilization, then the total revenue that could be generated might probably increase.

The third question deals with the issue of equity. If demand for health care becomes more sensitive to price changes as one moves from higher to lower income groups, then the introduction of user fees would proportionately decrease the poor's access to health care more than the rich's, making user charges regressive.

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Summarily, this study is concerned with all these three questions.

A. *Studies on Philippine Health Care*[1]

Demand analyses of Philippine health care have been based on primary data gathered through multi-disciplinary household surveys. Rimando (1976) used a multi-purpose survey conducted in Laguna province in 1975. Paqueo (1977) used the GINA survey, a 1975 national socio-economic survey of Population, Resources, Environment, and the Philippine Future (PREPF). Akin, Guilkey, and Popkin (1981) used the 1978 Bicol Multi-Purpose Survey (BMS). Bicol is one of the Philippines' poorest regions. The same Bicol data was used by Akin et al. (1985) and Ching (1985, 1986b).

The five works mentioned above do not have the same unit of analysis. Rimando and Paqueo worked on the household. Akin, Guilkey, and Popkin and Akin and his colleagues preferred to study individuals--in particular, children and adults. Using the Bicol data, Ching investigated the family[2] instead[3].

All these studies investigated the utilization of various types of health services and determined the factors affecting or influencing such use. Their models follow a general demand system wherein the choice or use of a service depends on the relative money and time costs associated with the service, the consumer's income, and a set of control variables (social, demographic, and biological).

Rimando's study suggests that income level, insurance coverage, education and belief of mothers, and demographic (age) and physiological (felt needs) characteristics of households have significant impact on demand for some types of health services. On the other hand, Paqueo found that the type of residence has a very large effect on such demand, with rural households at a disadvantage. The study on sick children by Akin, Guilkey, and Popkin revealed the influence of distance, income level, mother's education, and time costs.

Interestingly, Akin et al. arrived at a different finding: economic variables such as income, cash, and time costs were not important determinants of the choice of health services. The authors suggest that poverty and costs have very little to do with failure to use existing health care facilities and services. Instead, non-economic factors such as education and perceived seriousness of illness played stronger roles in determining use patterns.

Ching also found that economic factors are not significant. However, after dealing with multicollinearity and other econometric problems, she (1986b) obtained a number of significant economic factors, mostly cross prices. This indicates the interdependence of various health facilities which are organized into a referral system but which, at the same time, constitute a competitive network. Nevertheless, the results of the latter study do not invalidate the findings of

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1. The following review is also found in Ching (1986a).

2. "Family" is different from "household." A household is composed of the members of the family, resident domestic servants, and other persons who may be living with the family.

3. Sample size of Rimando's survey is 570 households; that of Paqueo, 2,902; Akin, Guilkey, and Popkin investigated 411 children in need; Akin and colleagues examined 401 adults and 566 children; Ching studied 379 families.

Akin et al. that poverty and costs have very little to do with failure to use existing health care facilities and services.

B. *Factors Affecting Health Care Demand*

Income. Higher-income families tend to have higher actual use of health services because they are able to afford the cost. But since they can also afford preventive care, they are able to reduce their real need for health services. This is the so-called double effect of income.

Heller (1976) found that for West Malaysia income was not a statistically significant determinant in the total demand for health care services. Nevertheless, income greatly increased the demand for modern private health care facilities than for public utilities. Using a sampling of sick Filipino children, Akin, Guilkey, and Popkin also found that income did not significantly determine the choice of health care facilities.

Price. Price has a negative effect on the demand for health care. Although total demand for health care was found in several studies to be not so responsive to price changes, selection of the source of health care services was observed to be influenced by the price factor. For example, Heller discovered that the decision to use or not to use public facilities was affected by the price of private health care.

Gertler, Locay, and Sanderson (1987) found that user fees can generate substantial revenues but are regressive, i.e., demand becomes more sensitive to price changes as income falls. This implies that user fees would proportionately reduce the poor's access to health care more than the rich's.

Non-monetary factors, such as time price, are expected to assume an increasingly important role in influencing the demand for health care as the out-of-pocket price falls. As net or out-of-pocket price falls, either because of increasing insurance coverage or because of the availability of subsidized care, demand becomes relatively more sensitive to changes in time price. Moreover, demand for free health services is expected to be more responsive to changes in time price than non-free services because time shares a greater proportion of the total price when availing of free facilities compared to non-free facilities (Acton 1976).

Health Insurance. Aside from reducing the net price of health care, insurance may be viewed as a method of financing the demand for health care. It not only reduces the cost of care, it also increases the family's ability to secure health services. Therefore, health insurance is expected to raise the utilization and expenditure of health care.

Age. The incidence of illness varies with age, so does the need for health care. The presence of children and elderly persons in the family raises the frequency of illness, which in turn increases the use of health services. Paqueo confirms that this is true of households with children 0-5 years old.

Sex. To isolate the effect of sex on demand, factors such as age and health status are considered in a model specification. However, attempts to do so yielded weak results; only marginal differences in usage were detected. Akin, Guilkey, and Popkin found sex to be insignificant in explaining the health care demand of Filipino children.

Sex discrimination is actually the major underlying reason for expecting differences in health service usage by men and women. In many societies, the perception that women have low economic value in the household leads to their low use of health care services.

Family Size. The effect of family size on the use of health services is unpredictable. A large family has a higher frequency of illness since it has more potential patients. However, it has less income per capita than a small family belonging to the same income level. This may reduce a large family's actual use of health services because of lower purchasing ability. Moreover, a large family may have enough people at home to care for a sick member. This compensates or substitutes for additional days of hospital care.

Education. Greater amount of education may enable a person to recognize early symptoms of illness, resulting in the patient's greater willingness to seek early treatment. The patient spends more for preventive services and less for curative services.

The mother's education is crucial because she usually supervises the household. In the Philippines, mother's education was found important in determining whether or not a sick child was taken for treatment. In over 50 percent of the cases, the most educated mothers used private modern practitioners, while the least educated mothers chose the same type only 25 percent of the time (Akin, Guilkey, and Popkin 1981).

Health Knowledge and Beliefs. An individual's health knowledge and beliefs affect his efficiency in maintaining personal health through dietary, hygienic, and preventive measures. It also affects the choice of health facilities.

Health Need. Demand for health care is based upon felt needs. Doctors assess whether felt needs are actual needs. Some turn out to be so. Self-perceived need determines whether or not an individual is in the market for health care. It is the immediate cause of decision to seek medical care.

In demand analysis, everyone in the sample, by definition, believes himself to be ill or in need of care. Thus, it makes more sense to measure health needs by items, such as type of illness or its perceived seriousness. Akin et al. found perceived seriousness of illness to be an overwhelmingly important explanatory variable which cut across all socio-economic lines and which forced both poor and rich alike to seek private modern care.

Distance of Source of Health Care. Distance has been the most studied hindrance to the use of health facility. The more distant a facility is from potential users, the less likely it is to be visited. Akin, Guilkey, and Popkin discovered this to be true in the case of child-outpatient visits in the Philippines.

However, Akin et al. argues that the preoccupation of planners with the distance of health facilities may indicate attention to an inappropriate proxy for truer items of interest--travel cost and travel time. He says:

> There is a one-to-one relationship among these variables only if everyone uses exactly the same mode of transportation, such as walking at exactly the same speed. Reducing the distance to health facilities is, moreover, not the only way to

reduce trip time and transportation costs... the economic 'distance' to facilities can be reduced by improving roads or providing new forms of transportation.

II. SOCIO-ECONOMIC INDICATORS

This study does not intend to establish the relationships between health care, health, and development. But it is unavoidable that some data on these variables be presented to identify the health scenario in the Philippines.

This chapter first describes the thirteen regions of the Philippines to provide a regional perspective of the demand for health care. Then it presents the health and socio-economic indicators for 1981 and 1988. It compares the health scenario based on the 1981 National Health Survey with the most recent data on socio-economic indicators obtained in 1988.

A. *Description of Regions*

The Philippines has a total land mass of 30 million hectares, equivalent to that of the American state of Arizona. It is divided into three major groups of islands (Luzon, Visayas, and Mindanao) which are further divided into thirteen regions.

Region I-- Ilocos. Known as the Ilocos Region, Region I consists of seven provinces: Abra, Benguet, Ilocos Norte, Ilocos Sur, La Union, Mountain Province, and Pangasinan. Overall, It has 4 cities, 172 municipalities, and 3,956 barangays. It has a total land area of 2,156,845 hectares, which is 7.2 percent of the national land territory. It is as big as the American state of Massachusetts and has a mountainous interior. To its north is the Babuyan Channel, to the west the China Sea, to the east the Cordillera mountain range, and to the south the Central Plain.

The soils of its plains are clay loam, silt loam, and sandy loam. Clay loam is best suited for rice production, which is why one of the region's primary products is rice. The region also produces livestock, poultry, and fish, among others. Its rolling areas, steep hills, and mountains also contain clay loam soil.

According to projections[4] by the National Statistics Office (NSO), Region I has a population of 4,133,684 as of 1988. That same year, according to the National Economic and Development Authority (NEDA), its gross domestic product (GDP) per capita was P8,440 at current rates, or P3,483 at constant 1982 prices[5].

Region II-- Cagayan Valley. Also known as Cagayan Valley, Region II has a land area of 3,640,300 hectares, or 12.1 percent of the country's total land territory. Its population is 2,712,698. It is engaged in the production of lumber, metallic minerals, fish, and rice.

It is composed of the provinces of Batanes, Cagayan, Isabela, Nueva Vizcaya, Ifugao, Kalinga-Apayao, and Quirino. It has a total of 118 municipalities. It lies on the northeastern part of Luzon, with the Bashi Channel to the north, Nueva Ecija and Quezon provinces to the south, the

4. Based on 1980 actual population figures, assuming moderate fertility decline and moderate mortality decline.

5. Foreign exchange rate in 1981 was P8 to US$1; in 1988 it was P21 to US$1.

Philippine Sea to the east, and the Ilocos Region to the west. It is known for its continuous mountain ranges and numerous fertile valleys. Its soil is generally loamy.

Agriculture is Cagayan Valley's main economic activity. Its leading crops are palay, corn, coconut, tobacco, vegetables, and rootcrops. Palay is the staple crop and is grown in all the region's provinces.

Its GDP per capita was P6,975 in 1988, which is equivalent to only P2,926 at 1981 constant prices.

Region III-- Central Luzon. Region III, known as Central Luzon, has a land area of 1,823,082 hectares, or 6.1 percent of the whole country. It is about the size of New Jersey. It is composed of the provinces of Bataan, Bulacan, Nueva Ecija, Pampanga, Tarlac, and Zambales. It has a population of 5,862,990 and a per capita GDP of P12,322 in 1988, or P4,434 at 1981 constant peso rates.

Cental Luzon's economic activities include fish culture, woodcraft, vinegar manufacturing, production of concrete products, jewelry making, candy making, wine distilleries, footwear manufacturing, oil refinery, sugar centrals, and export processing.

The region has an expansive lowland area with few scattered mountains, such as Mt. Arayat, Sierra Madre, and the Zambales mountain ranges. The lowlands contain fertile alluvial soil, while the highlands contain laterite soil.

The region has two distinct seasons: dry from November to April and wet during the rest of the year. Its climate best explains why its leading agricultural products are palay, fruits and nuts, vegetables, onions, corn, beans, and peas.

Region IV-- Southern Tagalog. Better known as Southern Tagalog, Region IV occupies 15.6 percent of the national land area on the southern part of Luzon. To its north is the Manila Bay and the province of Bulacan, to the south is the Sibuyan Sea, to the west the South China Sea, and to the east the Lamon Bay.

The region consists of the provinces of Aurora, Quezon, Rizal, Laguna, Batangas, Cavite, Marinduque, Oriental Mindoro, Occidental Mindoro, and Palawan. Its provinces are characterized by lowlands with few scattered hills, except for the island provinces which are mainly rugged mountains.

The region's 7,691,855 population is primarily engaged in rice production. It is the country's second highest rice producer. Its GDP per capita in 1988 was P15,340, or P6,146 at 1981 rates.

Region V-- Bicol. Bicol region forms a peninsula on the extreme southeastern part of Luzon, with Catanduanes island resting on the eastern side and Masbate island on the southwestern side. Aside from Catanduanes and Masbate, its other provinces are Albay, Camarines Sur, Camarines Norte, and Sorsogon.

The region has a population of 4,197,973 and a land area of 1,763,249 hectares, equivalent to that of the state of Hawaii. GDP per capita was P6,063 in 1988, or P2,454 at constant 1981 rates. It was the lowest income earner among all the regions in the Philippines.

The region is characterized by mountainous terrains and scattered areas of plains and valleys. Its fertile soil is appropriate for almost any kind of agricultural crops. The major crops are rice, coconut, and abaca. Sugar, corn, citrus, cacao, fruits, and nuts are supplementary crops. Palay or rice is the region's staple food.

Region VI-- Western Visayas. Region VI, or Western Visayas, has a total land area of 2,022,311 hectares (as big as the American state of New Jersey), or 6.7 percent of the country's land territory. It is bounded by Romblon to the north, Negros Oriental to the south, the Visayan Sea to the east, and Cuyo Island to the west. It consists of the provinces of Aklan, Antique, Capiz, and Iloilo in Panay Island, Negros Occidental in Negros Island, and the sub-province of Guimaras Island. The region is characterized by varying elevations in the interior, river valleys in the lowlands, and rich coastlines.

Its population in 1988 was 5,438,994. It is engaged in fish processing, furniture making, metalcraft, hat and bag making, jusi weaving, blacksmithing, tannery, salt making, charcoal making, boatbuilding, sugarcane milling, deep sea fishing, cement manufacturing, beverage bottling, lumber manufacturing, and mining. Its GDP in 1988 was P9,740 per capita, or P3,802 at constant 1981 prices.

The region's main agricultural product is rice because of its generally loamy soil. It also grows coconut and sugar extensively, which are considered the leading commercial crops.

Region VII-- Central Visayas. It is composed of the island provinces of Bohol, Cebu, and Negros Oriental, and the sub-province of Siquijor Island located on the southern tip of Negros Oriental. Its total land area of 1,495,142 hectares is equivalent to that of Northern Ireland or the state of Connecticut. Its population in 1988 was 4,446,456, while its GDP was P12,963 per capita, or P5,152 at 1981 rates.

To the north of the region is the Visayan Sea, to the south the Mindanao Sea, and to the east the Camotes Sea which separates Cebu from Negros Oriental. Central Visayas consists of highlands in the interior, with narrow coastal strips of arable lands.

The region is visited by minimum rainfall throughout the year. The months from November to April are relatively dry. Bohol is engaged in limited crop cultivation in its coastal plains. Cebu and Bohol have clayish soil, making them fairly suitable for rice, corn, and coconut. Negros Oriental and Siquijor have loan and sandy loam soils which are best suited to sugar and other agricultural crops.

Central Visayas is the country's major producer of corn, which is the staple food of the region's population.

Region VIII-- Eastern Visayas. It is composed of the provinces of Leyte and Southern Leyte in Leyte Island, Eastern Samar, Northern Samar, and Western Samar in Samar Island, and the island sub-province of Biliran. It is characterized by hills, low mountain ranges, and fertile lowlands. It is surrounded by the San Bernardino Strait to the north, Surigao Strait to the south, Bohol to the west, and the Pacific Ocean to the east. Its total land area is 2,143,169, equivalent to that of the American state of Massachussets.

Its soil on the eastern part is good for agriculture, but the uplands of Leyte are primarily hard rock. The northwestern and southwestern coasts are characterized by shale and sandstone.

Its principal food crops are rice, corn, and root crops, while coconut, abaca, and sugarcane are the leading commercial crops.

In 1988, its population was 3,242,836, while its GDP was P6,426 per capita, or P2,682 at constant 1981 rates.

Region IX-- Western Mindanao. Western Mindanao occupies 1,868,514 hectares, or 6.2 percent of the country's land territory. It is about the size of New Jersey. It is composed of the provinces of Zamboanga del Norte, Zamboanga del Sur, Basilan, Sulu, and Tawi-tawi. It lies along the western side of southern Philippines and is surrounded to the northwest by the Sulu Sea, to the south by Mindanao Sea, to the lowermost west by Sabah, and to the east by Misamis Occidental and the Moro Gulf.

Its population in 1988 was 3,060,825, while GDP was P8,671 per capita, or P3,508 at constant 1981 prices. The region is engaged in solar salt making, rubber latex tapping, african oil and coffee processing, shellcraft, and many others.

Region X-- Northern Mindanao. The region has an area of 2,832,774 hectares, or 9.4 percent of the national land territory. It is as big as the state of Maryland. Its economic activities include copra processing, coconut by-products processing, pottery, shellcraft, pineapple canning, wine making, and cattle raising.

It is bounded to the north by Bohol Sea; to the south by Lanao, Cotabato, and Davao provinces; to the west by Zamboanga; and to the east by Surigao del sur and the Philippine Sea.

Its provinces are Agusan del Norte, Agusan del Sur, Bukidnon, Camiguin, Misamis Occidental, Misamis Oriental, and Surigao del Norte.

The soil of Region X is alluvial. Sand loam soil prevails along the coastal lands. Clay loams cover the interior plains and are best suited to corn, palay, coconut, pineapple, banana, abaca, citrus, and coffee. The region ranks first in coffee production.

In 1988, its population was 3,437,549, and its GDP was P12,864 per capita, or only P5,516 at constant 1981 rates.

Region XI-- Southern Mindanao. Southern Mindanao is surrounded by North Cotabato, Bukidnon, and Agusan del Sur to the north, the Mindanao sea to the south, the Philippine Sea to the east, and the Moro Gulf and Sultan Kudarat to the west. It is about the size of Maryland and Delaware. It is composed of the provinces of South Cotabato, Davao del Norte, Davao Oriental, Davao del Sur, and Surigao del Sur. The region is primarily engaged in logging, sawmilling, pulp mining and paper milling, sugar processing, pineapple canning, and banana planting.

Southern Mindanao is characterized by mountainous areas, scattered hills, low flat plains. Its 1988 population was 4,132,019, with per capita GDP of P14,254, or P5,610 at constant 1981 prices.

Region XII-- Central Mindanao. Its land area of 2,329,323 hectares, or 7.8 percent of the national land territory, is about the size of the state of New Hampshire. It is bounded by Iligan Bay, Misamis Oriental, and Bukidnon to the north, South Cotabato to the south, Illana Bay and the Moro Gulf to the west, and Davao del sur to the east.

It is made up of the provinces of Lanao del Norte, Lanao del Sur, North Cotabato, Sultan Kudarat, and Maguindanao. It is characterized by upland margins bordering the central parts and by hills scattered in the western areas. Wide plains and swamplands prevail all over North Cotabato. Loam and clay types of soil dominate the region which is best suited to rice, corn, rubber, coffee, sorghum, and ramie. It is considered the major domestic supplier of rubber.

Region XII is engaged in steel manufacturing, plantation of ramie and citrus, coconut processing, and hog farming. In 1988, its population of 2,802,001 earned a GDP of P10,644 per capita, or P4,220 at constant 1981 prices.

National Capital Region (NCR)-- Metropolitan Manila. Metropolitan Manila is designated as the National Capital Region. It is composed of 4 cities (Manila, Pasay, Quezon, and Kalookan) and 13 municipalities (Makati, Malabon, Mandaluyong, Marikina, Muntinglupa, Navotas, Parañaque, Pasig, Pateros, San Juan, Tagig, Las Piñas, and Valenzuela). The first 12 municipalities were formerly part of Rizal, a province of Region IV, while Valenzuela was formerly part of Bulacan, a province of Region III.

With an area of 63,000 hectares, or 0.2 percent of the country's total land area, Metro Manila is about the size of the city of Chicago. It is the Philippines' premier urban complex and is the focal point of all economic and social activities.

Metro Manila lies along the flat and deltaic lands of the Pasig River (which regularly floods during the wet season) and the higher rugged lands of the Marikina Valley. It is bounded to the north by Bulacan, to the south by Cavite and Laguna, to the east by Rizal, and to the west by Manila Bay. It experiences an average rainfall of 2,077 millimeters and a mean annual temperature of 26.5^{o}C.

At present, the physiography of the Metropolis consists of six zones: Manila Bay, the coastal margin (and reclaimed land), Guadalupe Plateau, Marikina Valley, Laguna lowland, and Laguna de Bay.

In 1988, its estimated population of 7,561,413 earned a per capita GDP of P34,571, or P12,603 in constant 1981 rates.

The region's economy relies less on the agricultural sector, although it has the most modern feedmills, slaughterhouses, and canning plants. The manufacturing sector plays the major role in its economy. This sector consists of several sub-sectors: food, beverage, textile, tobacco, footwear and wearing apparel, and metal products, among others. Recently, however, wholesale and retail trade, i.e., small scale trading enterprises, also played a significant role in the region's growth. These small scale enterprises arose as a result of the massive layoff of workers from the manufacturing and other formal sectors of the economy.

B. *Health and Socio-Economic Indicators Across Regions*

Table 1 shows GDP per capita by region. In 1988, the NCR had the highest per capita GDP while Region V had the lowest. (In 1981, Region VIII had the lowest.) Between 1981 and 1988, most of the regions except I, VIII, and X displayed deterioration in real per capita GDP. Region III experienced the largest decline, while Region VIII, which had the lowest GDP in 1981, showed the greatest improvement.

Health indicators such as life expectancy at birth, infant mortality rate, and crude death rate are presented in Tables 2 to 4. Life expectancy at birth, female or male, was highest in the NCR and lowest in Regions IX and XII both in 1981 and in 1986. However, the ranking of percent change for female was reversed-- with the greatest improvement occuring in Regions IX and XII where life expectancy was supposed to be shortest, while the slightest improvement occured in the NCR where life expectancy, on the average, was supposed to be longest.

As expected, the NCR had the lowest infant mortality and crude mortality death rates, while Region XII had the highest, both in 1981 and 1988. All the other regions experienced a decline in both rates between 1981 and 1988. Region III achieved the largest decline in infant mortality rate, while Region XII had the slightest. The greatest decrease in crude death rate occured in Region I, while the smallest in the NCR.

The last three columns of Tables 5 and 6 show basic indicators of the health care infrastructure of the regions in 1981 and 1988, respectively. (Details on health service infrastructure are presented in the next chapter.)

There is a general tendency for higher-income regions to possess better health and health care indicators than lower-income regions. This is shown in the case of the NCR, where GDP per capita was highest, and of Region XII, where income was very low. In 1986, life expectancy in the NCR was 69 years for females and 66 years for males; in Region XII it was 55 years for females and 52 years for males. In 1988, infant mortality rate was 36 for the NCR but 102 for Region XII. For the same year, there was one physician for every 3,938 individuals in the NCR; in contrast, there was one physician for every 7,593 residents in Region XII. This was also the trend in 1981.

III. HEALTH CARE DELIVERY SYSTEM IN THE PHILIPPINES[6]

The government has constantly and strongly affirmed that health is a fundamental human right. This was exemplified in the Medium-Term Development Plan 1987-1992 of the National Economic and Development Authority (NEDA), where it adopted the "Health for All by the Year 2000" policy. However, health care expenditure by the national government consistently remained a mere 4 percent of the total public expenditures for the period 1973 to 1986 (ADB July 1987). This makes it all the more necessary to maximize the use of whatever scarce resources the government has through an effective and efficient health care delivery system.

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6. This chapter is culled from Lanuza (1989).

Table 1
Gross Regional Domestic Product Per Capita, 1981 and 1988

Region	1981	1988		Percent Change 1981-1988	
		Actual or Current Pesos	Constant 1981 Pesos	Actual Pesos	1981 Pesos
Phil.	6,162	13,996	5,484	127.1	(11.0)
NCR	15,273	34,571	12,603	126.4	(17.5)
I	3,348	8,440	3,483	152.1	4.0
II	3,711	6,975	2,926	88.0	(21.2)
III	5,920	12,322	4,434	108.1	(25.1)
IV	7,024	15,340	6,146	118.4	(12.5)
V	2,843	6,063	2,454	113.3	(13.7)
VI	4,960	9,740	3,802	96.4	(23.3)
VII	5,379	12,963	5,152	141.0	(4.2)
VIII	2,348	6,426	2,682	173.7	14.2
IX	4,150	8,671	3,508	108.9	(15.5)
X	5,360	12,864	5,512	140.0	2.8
XI	5,717	14,254	5,618	149.3	(1.7)
XII	4,411	10,644	4,220	141.3	(4.3)

Sources: National Economic and Development Authority (NEDA).
National Statistics Office (NSO).

Table 2
Life Expectancy at Birth,* by Sex and Region, 1981 and 1986

Region	1981		1986		Percent Change	
	Female	Male	Female	Male	Female	Male
NCR	68.2	64.5	69.2	65.8	1.5	2.0
I	65.1	61.5	66.6	63.0	2.3	2.4
II	60.3	56.9	61.8	58.4	2.5	2.6
III	67.3	63.5	68.8	64.9	2.2	2.2
IV	66.5	62.7	67.9	64.1	2.1	2.2
V	63.9	59.3	65.4	60.6	2.3	2.2
VI	65.0	60.1	66.1	61.7	1.7	2.7
VII	66.1	62.3	67.6	63.8	2.3	2.4
VIII	60.3	56.9	61.8	58.4	2.5	2.6
IX	53.3	50.3	54.8	51.7	2.8	2.8
X	56.9	53.9	58.4	56.2	2.6	4.3
XI	56.3	53.1	57.8	54.6	2.7	2.8
XII	53.3	50.3	54.8	51.7	2.8	2.8

*estimates

Source: Population Studies Division, National Statistics Office (NSO).

Table 3
Infant Mortality Rate,* by Region, 1981 and 1988
(per thousand population)

Region	1981	1988	Percent Change
Phil.	61.9	52.8	(14.7)
NCR	43.0	36.3	(15.6)
I	55.8	46.9	(15.9)
II	76.9	67.2	(12.6)
III	47.0	38.5	(18.1)
IV	50.4	42.2	(16.3)
V	63.6	55.1	(13.4)
VI	59.3	51.0	(14.0)
VII	52.0	43.2	(16.9)
VIII	76.9	67.2	(12.6)
IX	111.2	100.6	(9.5)
X	92.6	79.3	(14.4)
XI	96.0	85.5	(10.9)
XII	111.2	102.2	(8.1)

*estimates

Source: Population Studies Division,
National Statistics Office (NSO).

Table 4
Crude Death Rate,* by Region, 1981 and 1988
(per thousand population)

Region	1981	1988	Percent Change
Phil.	8.5	7.5	(11.8)
NCR	5.6	5.2	(7.1)
I	9.7	8.2	(15.5)
II	10.3	9.0	(12.6)
III	7.0	6.1	(12.8)
IV	7.4	6.5	(12.2)
V	9.0	7.9	(12.2)
VI	8.9	7.8	(12.4)
VII	8.5	7.5	(11.8)
VIII	10.8	9.6	(11.1)
IX	14.0	12.4	(11.4)
X	12.0	10.5	(12.5)
XI	12.4	11.1	(10.5)
XII	14.0	12.5	(10.7)

*estimates

Source: Population Studies Division,
National Statistics Office (NSO).

Table 5
Socio-economic Indicators by Region, 1981

Region	GDP per capita at current prices (pesos)	Life Expectancy at Birth† (years) F	M	Infant Mortality Rate† (per thousand live births)	Crude Death Rate† (per thousand population)	Access to Safe Drinking Water (proportion of households)	Population per physician	Population per hospital	Population per hospital bed
Phil.	6,162			61.9	8.5	64.5	8,942	28,951	562
NCR	15,273	68.2	64.5	43.0	5.6	94.4	7,308	37,761	198
I	3,348	65.1	61.5	55.8	9.7	61.0	5,603	24,073	630
II	3,711	60.3	56.9	76.9	10.3	56.5	8,663	19,672	782
III	5,920	67.3	63.5	47.0	7.0	70.4	7,167	25,760	757
IV	7,024	66.5	62.7	50.4	7.4	68.2	8,766	27,064	744
V	2,843	63.9	59.3	63.6	9.0	60.3	18,372	23,346	790
VI	4,960	65.0	60.1	59.3	8.9	61.7	11,733	55,964	896
VII	5,379	66.1	62.3	52.0	8.5	72.5	6,661	39,959	655
VIII	2,348	60.3	56.9	76.9	10.8	48.5	9,566	38,594	1,034
IX	4,150	53.3	50.3	111.2	14.0	44.6	16,681	33,436	1,056
X	5,360	56.9	53.9	92.6	12.0	65.0	6,764	23,179	604
XI	5,717	56.3	53.1	96.0	12.4	50.0	15,773	22,601	715
XII	4,411	53.3	50.3	111.2	14.0	46.3	21,438	24,621	819

†estimates

Source: National Economic and Development Authority (NEDA).
National Statistics Office (NSO).

Table 6
Socio-economic Indicators by Region, 1988

Region	GDP per capita at current prices (pesos)	Life Expectancy at Birth (years)* F	M	Infant Mortality Rate* (per thousand live births)	Crude Death Rate* (per thousand population)	Access to Safe Drinking Water[a] (proportion of households)	Population per physician[b]	Population per hospital[c]	Population per hospital bed[c]
Phil.	13,996			52.8	7.5	74.7	6,427	31,882	654
NCR	34,571	69.2	65.8	36.3	5.2	-	3,938	41,316	258
I	8,440	66.6	63.0	46.9	8.2	64.9	4,746	27,970	723
II	6,975	61.8	58.4	67.2	9.0	63.3	5,187	24,292	827
III	12,322	68.8	64.9	38.5	6.1	84.5	7,347	32,532	1,022
IV	15,340	67.9	64.1	42.2	6.5	77.7	7,793	33,430	1,017
V	6,063	65.4	60.6	55.1	7.9	52.3	7,483	27,003	831
VI	9,740	66.1	61.7	51.0	7.8	69.5	8,432	67,377	1,134
VII	12,963	67.6	63.8	43.2	7.5	74.6	7,460	44,511	704
VIII	6,426	61.8	58.4	67.2	9.6	76.9	5,812	40,320	1,061
IX	8,671	54.8	51.7	100.6	12.4	42.8	7,633	35,228	968
X	12,864	58.4	56.2	79.3	10.5	75.1	6,807	22,186	655
XI	14,254	57.8	54.6	85.5	11.1	54.3	10,253	20,786	644
XII	10,644	54.8	51.7	102.2	12.5	78.7	7,593	21,186	673

*estimates

Source: National Economic and Development Authority (NEDA), National Statistics Office (NSO).

a/1986 figures.
b/Refers only to DOH Health Manpower
c/1987 figures.

A. *Overview*

The Philippine health care delivery system consists of a network of health, diagnostic, and treatment facilities operated by the government through a mechanism of referrals and a loosely-linked network of mainly medical facilities operated by the private sector--both of which are dispersed unevenly across the country. Public health facilities provide promotive, preventive, curative, and rehabilitative services, while private facilities deliver more of the direct personal care which are curative and rehabilitative (INTERCARE 1987). However, the latter, especially the Philippine Pediatric Society, also provide preventive health services, particularly immunizations. The Department of Health (DOH) is the primary agency of the government charged with health care delivery, although other government agencies support DOH's efforts, such as the Department of National Defense (DND) and local government units.

Aside from the public and private sectors, a third subsystem exists. Called the mixed sector, it includes health agencies supported by private organizations but partly subsidized by the national government. Examples are the Philippine Cancer Society, Philippine Tuberculosis Society, and the puericulture center movement. However, this sector provides only specific types of services. For example, the puericulture centers render only maternal and child care services.

The DOH continues to be the lead institution tasked with the coordination and delivery of health services and the regulation and supervision of operations of all health facilities in the country. It formulates health plans, programs, and policies; sets standards of health services and facilities; administers all laws, rules, and regulations related to health care; and monitors the health condition of the populace.

Consistent with its functions, the DOH also operates hospitals, rural health units, public health laboratories, and health research facilities, among others. In fact, it is the largest health service delivery organization in the country. Therefore, it is essential to look into the health care delivery system of the DOH, particularly its network of two-way hierarchy of referrals, and the corresponding services provided by the different health sub-units.

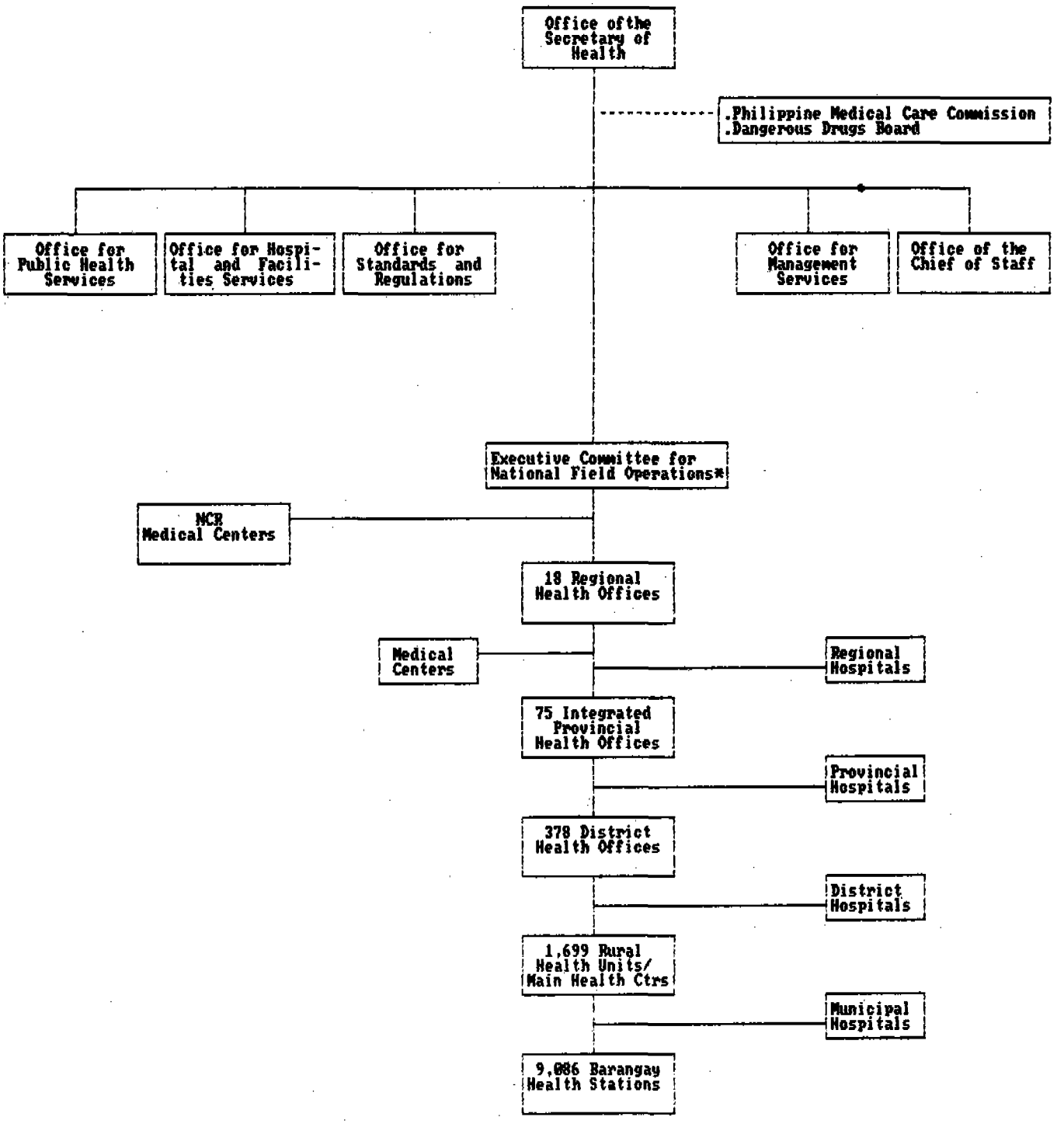
B. *Organizational Structure of the DOH*

Administratively, the DOH consists of two divisions. The first is the Central Office with its various offices, each headed by an undersecretary who is subordinate to the Secretary of Health. The offices of these undersecretaries are purely staff offices which provide support services to field operations. They coordinate with each other in the formulation of national health policies, help in the setting of national targets for different health programs, and monitor the performance of various field offices (Figure 1).

The second division consists of the field health units (from the Regional Health Offices down to the Barangay Health Stations) and the various specialized field units (e.g., the special health program units such as malaria and schistosomiasis units, and the special clinics such as chest and skin clinics). The delivery system is arranged in such a way that it forms a hierarchical structure of referrals. At the top are the 13 Regional Health Offices (RHOs) with their respective training centers, each headed by a Regional Health Director (RHD), who is a physician. The RHOs are, in turn, assisted by their respective technical staffs.

Figure 1

DOH Organizational Chart



*Composed of the Secretary and their respective assistant secretaries plus the secretariat.

It must be noted that RHOs themselves do not perform any service delivery but only render administrative support to the remaining field health units under their jurisdiction. Moreover, RHOs perform higher levels of management, allowing the Integrated Provincial Health Offices (IPHOs) to handle the more routine ones. An RHO is made up of several IPHOs. Linked with each RHO is a regional hospital, and incorporated with it is a regional laboratory. In some cases, a medical center is attached to the RHO. In fact, it is only in the NCR that a medical center is directly supervised by the DOH Executive Committee for field operations.

Next in line are 75 IPHOs with their respective provincial hospitals. Each IPHO is headed by a Provincial Health Officer (also a physician) who, in turn, is assisted by an Assistant Provincial Health Officer, plus a technical and administrative staff. The staffing pattern consists of a nurse supervisor and a chief sanitary inspector who supervise their counterparts in the rural health units--a medical specialist, a dietary nutritionist, and health educators. Additional personnel, such as health educators and sanitary inspectors, may be included in cases where funds of the provincial government can still shoulder them.

An IPHO is made up of several District Health Offices (DHO), which are the topmost health units at the local level[7]. Accordingly, district and municipal hospitals are integrated into each DHO. At the district level, a municipal hospital also serves as a DHO when the former has one or more rural health units (RHUs) within its catchment area (municipality). As of July 1988, there is a total of 372 DHOs throughout the country, with Luzon having the most number of offices. Within Luzon, Region IV tops the list (Table 7). Each IPHO is comprised of several RHUs[8].

The staff of one Main Health Center (MHC) varies according to the size of the catchment area. The basic staffing pattern, however, consists of the Municipal Health Officer (who is also the rural health physician), one public health nurse, at least one rural health midwife, and one rural sanitary inspector. Additional manpower, usually midwives or sanitary inspectors, may be added in the case of bigger municipalities. Republic Act (RA) 1891 has set the norm for the staffing of RHUs (Appendix A). The rural health physician also acts as the chief sanitary inspector in his catchment area. He also coordinates local health and other related activities such as school health services.

A Barangay Health Station (BHS) is manned by a rural health midwife. As of July 1988, there were 1,689 MHCs and 9,036 BHSs nationwide, the bulk being located in Region IV. The most disadvantaged regions in terms of number of MHC and BHS units are Regions XI and XII, respectively (Table 7). Nonetheless, it is important to note that one must also consider the size of the population being catered to by each of these units. According to the World Bank (1979), the prescribed norm is one MHC per 20,000 population and one BHS per 5,000 population. As Table 8 shows, none of the 12 regions is able to meet the service standard for the MHC while only

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7. Local refers to the district, municipal, and barangay levels.

8. Note that one Main Health Center (MHC) together with several BHSs comprise what is now called the RHU. These RHUs are the chief health service units at the municipal level. They serve as the out-patient and basic health service units of the district hospitals. At least one RHU is assigned in every municipality. Supplementing the RHU of the public health system are privately-owned puericulture centers or clinics which are owned and funded either by non-governmental organizations or by the municipal governments.

Table 7
Number and Percentage Distribution of Field Health Units of the DOH as of July 1988

Region	DOH Field Health Units		
	District Health Office	Main Health Center	Barangay Health Station
I	38 (10.2)	193 (11.4)	1,022 (11.3)
II	30 (8.1)	110 (6.5)	572 (6.3)
III	34 (9.1)	202 (12.0)	1,137 (12.6)
IV	49 (13.2)	242 (14.3)	1,303 (14.4)
V	27 (7.2)	113 (6.7)	664 (7.3)
VI	35 (9.4)	147 (8.7)	966 (10.7)
VII	29 (7.8)	137 (8.1)	771 (8.5)
VIII	36 (9.7)	147 (8.7)	600 (6.6)
IX	27 (7.2)	102 (6.0)	478 (5.3)
X	24 (6.4)	119 (7.0)	544 (6.0)
XI	20 (5.4)	84 (5.0)	630 (7.0)
XII	23 (6.2)	93 (5.5)	349 (3.9)
TOTAL	372 (100.0)	1,689 (100.0)	9,036 (100.0)

Source: Department of Health, Management Advisory Service.

Table 8
Number of MHCs and BHSs* to Population Ratio, by Region as of July 1988

Region	Main Health Center	Barangay Health Station
I	1:21,418	1:4,045
II	1:24,661	1:4,742
III	1:29,025	1:5,156
IV	1:31,784	1:5,903
V	1:37,150	1:6,322
VI	1:37,000	1:5,630
VII	1:32,456	1:5,767
VIII	1:22,060	1:5,405
IX	1:30,008	1:6,403
X	1:28,887	1:6,319
XI	1:49,191	1:6,559
XII	1:30,129	1:8,029
Total	1:34,767	1:6,498

* Includes only those under the Department of Health (DOH).

Note: Population figures used are year-end projections (computed by the National Statistics Office (NSO) by assuming moderate fertility decline and moderate mortality decline).

Regions I and II are able to meet the BHS standard. However, these standards are still subject to revisions based on prevailing health situations, such as morbidity rate and disease structure of the population.

Over the years, the DOH organizational structure underwent several reorganizations (refer to Appendix B for a chronological listing of the more notable reorganizations from the perspective of health service delivery). To date, DOH's health care delivery system is organized and has been restructured in such a way that preventive/promotive (notably public health) and curative/rehabilitative (notably hospitals) care are integrated into each local health unit. It is hoped that through the integration of these two types of care, horizontal coordination can be accomplished at the local level.

To be more explicit, the DOH field operations consist of four levels: regional, provincial, district, and municipal. The organization of the DOH from the perspective of service delivery is shown in Figure 1. This is consistent with the 1982 reorganization plan in which the public health (mainly preventive and promotive) and medical (mainly curative and rehabilitative) subsystems were integrated into a unified health service delivery system, leading to the integration of the preventive, promotive, curative, and rehabilitative types of services.

Curative and rehabilitative services are delivered by both the RHUs and hospitals, although the latter definitely provide a higher level of medical care. As of 1987, only 32.8 percent of the total number of licensed hospitals nationwide are owned by the government while 67.2 percent are privately-owned. On a regional breakdown, this is still the case, except for Regions VI and VIII which have less private hospitals than public ones. However, government hospitals have more hospital beds (53.0 percent of the nationwide total) than private hospitals, although Regions I, IV, V, X, XI, and XII have more private hospital beds (Table 9).

Both government and private hospitals are supposed to be licensed by the DOH before they can operate. In reality, however, not all hospitals are licensed. Thus, the number of existing hospitals actually exceeds the figures provided in Table 9. The guidelines for categorizing hospitals for licensure is shown in Appendix C. Previously, the categorization of hospitals was based on the number of available hospital beds. At present, though, this is done according to the type of services offered by the hospital, plus its teaching, training, and research capabilities.

C. *The Medical Subsystem*

Essentially, the medical subsystem is organized along three levels: primary, secondary, and tertiary.

At the bottom of this three-tiered system are the primary care hospitals which require neither the specialized skills of physicians nor the sophisticated equipments of hospitals. Instead, the services at this level are provided primarily by a general licensed physician and support personnel (e.g., barangay health workers or aides, midwives, nurses). The services, usually done on an outpatient basis, cover the whole gamut of promotive, basic curative, and rehabilitative health services. Primary care hospitals include municipal hospitals, puericulture centers, community hospital and health centers (CHHC), and small private and industrial clinics.

Table 9
Summary Distribution of Government and private Hospitals/Hospital Beds Licensed by the DOH as of 1987

REGION	GOVERNMENT*		PRIVATE		TOTAL	
	Hospital	Hospital Beds	Hospital	Hospital Beds	Hospital	Hospital Beds
I	46	2,735	99	2,872	145	5,607
II	49	2,255	60	946	109	3,201
III	51	3,160	125	2,440	176	5,600
NCR	41	17,746	137	10,813	178	28,559
IV	77	3,260	147	4,104	224	7,364
V	44	2,179	108	2,762	152	4,941
VI	49	2,715	30	1,980	79	4,695
VII	42	3,192	56	3,008	98	6,200
VIII	49	2,102	30	900	79	3,002
IX	39	2,116	46	977	85	3,093
X	48	2,355	103	2,757	151	5,112
XI	31	1,470	163	4,790	194	6,260
XII	24	1,240	105	2,823	129	4,063
TOTAL	590	46,525	1,209	41,172	1,799	87,697

*Includes licensed hospitals under the Department of Health (DOH). and other government agencies.

Source: Department of Health, Bureau of Licensing and Regulation.

Next to these are the secondary care hospitals which require the skills of a general licensed physician with at least six months of postgraduate basic-specialized training in the fields of general medicine, obstetrics-gynecology, pediatrics, and basic surgery (e.g., appendectomy, caesarean operation). Physicians in these hospitals attend to less complicated cases which require basic hospital facilities and the help of support personnel. The services are delivered either on an in-patient or out-patient basis. District hospitals as well as some private hospitals (generally owned by a group of medical doctors living in the area) belong to this category. More complex cases which cannot be handled at the local level are then referred to the provincial hospitals and onwards, depending on the degree of complexity of the case. Similarly, simpler and more basic cases are referred to lower level facilities. The latter, however, does not usually happen due to the widespread bypassing of lower level facilities by persons who can afford higher level ones.

At the top are the tertiary care hospitals which cater to highly specialized and complicated cases requiring sophisticated diagnostic and treatment facilities, usually done on an in- patient basis. In addition, these hospitals render consultative services and treatment of complicated cases done on an out-patient basis.

Hospitals in the tertiary level are further subdivided into three sublevels: tertiary provincial, tertiary regional, and tertiary medical centers.

The first refers to departmentalized hospitals with or without teaching and training capabilities in the basic specialties (i.e., internal medicine, obstetrics-gynecology, pediatrics, and surgery) and other ancillary services[9] (i.e., anesthesia, laboratory, and radiology services). This includes provincial as well as private hospitals providing the same range of services.

One step higher are the tertiary regional hospitals. They are departmentalized hospitals with teaching, training, and research capabilities as well as accredited residency training programs in the fields of surgery, pediatrics, internal medicine, obstetrics-gynecology, EENT, and orthopedics. These hospitals also provide ancillary services. Regional hospitals and their counterpart private hospitals belong to this sub-category.

At the tip of this pyramidal structure are the medical centers, both government- and privately-owned, which provide highly specialized tertiary health care. These departmentalized hospitals have teaching, training, and research capabilities and accredited residency training programs in both the basic specialties and sub-specialties (Appendix D).

Other than these primary, secondary, and tertiary hospitals, the DOH also has "special" hospitals, particularly sanitaria, which cater principally to those afflicted with leprosy.

D. *Regional Distribution of Hospitals*

It is interesting to look into a more detailed presentation of the distribution of hospitals across the various regions in the country (refer to Table 10 for government hospitals and Table 11 for private hospitals).

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9. An ancillary medical service is an organized unit within the hospital with facilities such as pharmacy, laboratory, radiology, and other health services and with the necessary manpower complement to assist the physician in the diagnosis and treatment of patients through the performance of diagnostic and therapeutic procedures. Examples of these are anesthesia, laboratory, radiology, dental, and pharmacy, as well as out-patient, services (Department of Health 1985).

Table 10
Government Hospitals Licensed by the DOH, by Region
as of 1987

REGION	TOTAL NO. OF GOVERNMENT		OPERATING HOSPITALS UNDER THE DEPARTMENT OF HEALTH																				CATEGORY		
			TYPES																		TOTAL NO. OF D O H				
			TERTIARY														MEDICARE COMMUNITY HOSPITAL						PRIMARY	SECONDARY	TERTIARY
			MED. CTR.		REGIONAL		PROVINCIAL		DISTRICT		MUNICIPAL		SPECIAL		SPECIALTY		SANITARIA		RESEARCH							
	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Hosp.	Hosp.
NCR	41	17,746	3	1,100	2	400	-	-	3	150	1	25	6	8,511	4	820	1	2,000	1	50	-	-	21	13,056	-	3	18
I	46	2,735	1	350	1	150	8	1,000	25	1,050	2	20	-	-	-	-	-	-	-	-	7	100	44	2,670	15	17	12
II	49	2,255	-	-	1	400	7	750	31	975	4	40	-	-	-	-	-	-	-	-	6	90	49	2,255	10	35	4
III	51	3,160	1	300	1	250	6	825	27	1,000	-	-	-	-	-	-	-	-	-	-	6	90	41	2,465	5	29	7
IV	77	3,260	-	-	1	200	10	1,050	36	1,425	7	75	-	-	-	-	-	-	-	-	19	280	73	3,030	25	38	10
V	44	2,179	-	-	1	450	5	700	22	625	6	65	-	-	-	-	1	200	-	-	8	115	43	2,155	15	22	6
VI	49	2,715	1	300	1	400	6	500	25	875	7	75	-	-	-	-	1	300	-	-	6	90	47	2,540	11	28	8
VII	42	3,192	1	350	1	200	4	450	20	660	4	40	-	-	-	-	1	1,000	-	-	5	75	36	2,775	10	19	7
VIII	49	2,102	-	-	1	250	6	625	26	975	5	50	-	-	-	-	-	-	-	-	8	115	46	2,015	12	27	7
IX	39	2,116	-	-	1	200	5	325	16	650	8	80	-	-	-	-	2	570	-	-	4	66	36	1,891	14	17	5
X	48	2,355	-	-	1	200	6	650	21	865	2	20	-	-	-	-	-	-	-	-	8	115	38	1,850	12	19	7
XI	31	1,470	1	350	1	150	4	400	15	450	6	60	-	-	-	-	-	-	-	-	4	60	31	1,470	10	14	7
XII	24	1,240	-	-	1	200	5	325	10	375	5	50	-	-	-	-	1	250	-	-	1	15	23	1,215	7	12	4
TOTAL	590	46,525	8	2,750	14	3,450	72	7,600	277	10,075	57	600	6	8,511	4	820	7	4,320	1	50	82	1,211	528	39,387	146	280	102

Source: Department of Health, Bureau of Licensing and Regulations.

Table 10 (continued)

OPERATING HOSPITALS UNDER OTHER GOVERNMENT AGENCIES																													
DEPT. OF NATIONAL DEFENSE		CHARTERED CITY		R H U & F P CENTERS a/		PROVINCIAL GOVERNMENT OFFICE		CITY GOVERNMENT		OFFICE OF THE PRESIDENT		MUNICIPAL MAYOR'S OFFICE		UNIVERSITY HOSPITAL		DEPT. OF JUSTICE		OTHER GOVERNMENT AGENCIES		TOTAL NO. OF OTHER GOVERNMENT AGENCIES		CLASSIFICATION				C A T E G O R Y					
																						GENERAL		SPECIAL		PRIMARY		SECONDARY		TERTIARY	
Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds
8	3,660	5	700	-	-	-	-	4	115	1	50	-	-	-	-	1	50	1	115	20	4,690	16	4,600	4	90	5	140	5	275	10	4,275
1	50	1	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	65	2	65	-	-	1	15	1	50	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	325	3	220	-	-	1	100	-	-	2	50	-	-	-	-	-	-	-	-	10	695	10	695	-	-	2	50	6	395	2	250
3	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	30	-	-	4	230	4	230	-	-	1	30	3	200	-	-
1	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	24	1	24	-	-	-	-	1	24	-	-
-	-	1	25	-	-	-	-	-	-	-	-	-	-	1	150	-	-	-	-	2	175	2	175	-	-	1	25	-	-	1	150
3	155	3	262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	417	6	417	-	-	4	117	1	100	1	200
-	-	1	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	62	3	87	1	25	2	62	2	62	1	25	-	-
2	200	1	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	225	3	225	-	-	-	-	3	225	-	-
1	100	-	-	4	40	-	-	2	300	-	-	2	40	1	25	-	-	-	-	10	505	10	505	-	-	7	105	2	250	1	150
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	1	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	25	1	25	-	-	-	-	1	25	-	-
23	4,714	4	1,297	4	40	1	100	6	415	3	100	2	40	2	175	2	80	3	177	62	7,138	56	6,986	6	152	23	544	24	1,569	15	5,025

a/ Per Dr. Consuelo D. Aranas, Regional Health Director for Region IV, these RHU and FP Centers are merely observation centers and are not considered as hospitals although they may have beds in their units.

Table 11
Private Hospitals Licensed by the DOH, by Region as of 1987

Region	Total No. of		Classification				Category					
			General		Special		Primary		Secondary		Tertiary	
	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds	Hosp.	Beds
NCR	137	10,813	97	9,463	40	1,350	40	632	51	1,823	46	8,358
I	99	2,872	96	2,834	3	38	58	867	34	1,276	7	729
II	60	946	60	946	-	-	46	558	13	288	1	100
III	125	2,440	92	2,095	33	345	61	632	52	1,058	12	750
IV	147	4,104	127	3,756	20	348	62	778	66	1,757	19	1,569
V	108	2,762	108	2,762	-	-	62	910	35	1,067	11	785
VI	30	1,980	28	1,937	2	43	13	265	7	225	10	1,490
VII	56	3,008	48	2,809	8	199	25	546	15	462	16	2,000
VIII	30	900	26	811	4	89	15	262	12	318	3	320
IX	46	977	46	977	-	-	27	336	17	516	2	125
X	103	2,757	90	2,495	13	262	74	1,298	21	744	8	715
XI	163	4,790	156	4,599	7	191	133	2,814	20	826	10	1,150
XII	105	2,823	104	2,793	1	30	76	1,283	23	935	6	605
Total	1,209	41,172	1,078	38,277	131	2,895	692	11,181	366	11,295	151	18,696

Source: Department of Health, Bureau of Licensing and Regulation.

As shown in Table 9, the NCR has the least number of district and municipal hospitals and has no Medicare Community Hospital (MCH), although it has the largest number of tertiary regional hospitals and medical centers. Moreover, all specialty hospitals which cater to ailments of specific human organs are located here, thereby highlighting the highly curative nature of the services provided by NCR health units. These are the: Heart Center for Asia, for cardiovascular diseases; Kidney Center of the Philippines, for ailments of the kidneys; Lung Center of the Philippines, for pulmonary diseases; and Lungsod ng Kabataan, for complex pediatric cases.

In addition, all special hospitals, which cater to specific segments of the population, are also situated at the NCR. These are the: National Children's Hospital, for children; Dr. J. Fabella Memorial Hospital, for maternity cases (i.e., women); National Center for Mental Health, for the mentally ill; National Orthopedic Hospital (NOH), for treatment of deformities, bone diseases, and injuries of the bones and joints; Quezon Institute (QI), for those afflicted with tuberculosis; and San Lazaro Hospital, for those with communicable diseases.

In all regions except NCR, the bulk of hospitals under the DOH belong to the secondary category, while the second largest category group relative to the total number of DOH hospitals in each region, with the exception of Region III and NCR, are the primary hospitals. It must be noted that NCR has absolutely no primary hospital under the DOH although, predictably, it has the most number of tertiary care hospitals.

Among government agencies, the DND has the most number of hospitals and hospital beds nationwide. These include the Armed Forces of the Philippines (AFP) Medical Center, for the military and their dependents; and the Veterans Memorial Hospital, for the veterans and their dependents.

The bulk of private hospitals in each region, except for Regions IV and NCR, are of the primary type. It is clear that, except for the NCR and Regions VI and VII, private tertiary care hospitals have the least number relative to each regional total.

It is evident, at least in principle, that the emphasis of today's health policymakers is on the provision of health services to the rural populace. Although the disease structure of people in the rural areas may vary from one region to another, a certain package of health services may apply to a wide range of these various specific diseases. Thus, health authorities focus more on the preventive and promotive aspects of health services delivery through the implementation of a number of public health packages or programs as enumerated in Appendices E and F. The delivery of these said programs is done through the field health units of the DOH (i.e., RHUs and special health program units).

Another important service being provided by the public health subsystem down to the RHU level is dental health. This consists of preventive dental care (e.g., prophylaxis) and simple curative care (e.g., tooth extraction). Dental work is divided among public health dentists, dentists of the puericulture centers, and school dentists. A public health dentist, together with a dental aide and medical technologist, covers one or more municipalities.

Apart from the DOH, the private sector through the voluntary health organizations and other government agencies (e.g., National Nutrition Council, Department of Agriculture) are also involved in preventive health care.

Since 1954, health policymakers had been aware of the need for a more effective and efficient delivery of health services, although this was only given more emphasis and wider coverage in 1975 with the implementation of the "Restructured Health Care Delivery System" (RHCDS). This system is a response to the need to spread limited health resources over a larger geographical catchment area, primarily through a strengthened rural health care infrastructure. It also conforms to the three-tiered system of referrals from primary to tertiary care.

The RHCDS began as part of the first population project in 1973 funded by the World Bank. This system provides for delivery of a package of primary[10] health care services (e.g., maternal and child care, family planning, immunizations, communicable disease control, vital statistics, medical care, health education, public health nursing, and environmental health promotion measures).

The innovations contributed by this system include: (1) the emphasis on out-patient consultation and ambulatory treatment, and (2) redistribution of functions among health personnel. In the latter, doctors and nurses can now delegate to auxiliary personnel (i.e., midwife, "hilot," and barangay health worker) some medical functions like the giving of immunizations and family planning services. This second innovation somehow eased the job of doctors and nurses, enabling them to concentrate more on administrative matters like planning and to attend to more complicated medical cases.

It must be pointed out, however, that traditional healers (e.g., hilots, herbolarios) were (and still are) part of the Philippine health care delivery system. A study by the Research Institute for Tropical Medicine indicated that a significant number of acute respiratory infection (ARI) cases sought the help of these traditional healers.

Among the auxiliary personnel, the midwife is most notable because of her expanded duties. She visits homes, organizes mothers' groups, does follow-up visits and consultations, and supervises/trains "hilots" in her assigned area. The "hilots" (traditional midwives) are not members of the RHUs but they are given special consideration since they are often the ones approached by the rural folks to attend to pregnant women and to help in the delivery of babies. As observed by the World Health Organization (1978), supervision of these "hilots" by midwives consists of scheduled meetings at the BHS and actual field demos with emphasis on asepsis and referrals.

Public health nurses, aside from assisting in the daily duties of physician, are also now involved in more complex services, such as intra-uterine device (IUD) insertion, maternal and child health activities referred by the midwives, and simple laboratory examinations. They also manage BHSs and conduct regular visits to these places. However, they refer abnormal and high-risk medical cases to physicians.

The rural sanitary inspector, compared to the public health nurse or even the rural health midwife, needs minimal skill. His role only concerns visits to public places (e.g., public markets) and homes in relation to community sanitation program.

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10. As the World Health Organization defines it, primary health care refers to promotive, preventive, and basic out-patient services undertaken at the level of first contact with local health personnel.

One of the service strategies of RHCDS is the establishment of BHSs to extend less sophisticated health services to more far-flung areas which cannot be covered or served by the MHCs. These BHSs serve as the RHU sub-centers, although the MHCs still handle the referrals from the BHSs.

Starting 1977, barangay health workers (BHWs) were included in the list of first contact personnel, although they were not previously entrusted with direct medical functions. Their task primarily involved persuading community members to participate in community health programs through information, communication, and education activities--which are promotive in nature. They were also assigned to monitor and record vital events in their catchment areas. At present, BHWs are allowed to render simple medical functions (e.g., dispensing certain drugs and medicines; identifying signs and symptoms of common diseases and referring them to higher level health personnel; collecting diagnostic specimens such as sputum, blood smears, and stools for specific programs; and doing follow-ups of health cases for monitoring purposes).

It is noteworthy that these health workers do not receive any monetary compensation. Instead, they are only assured by the government of receiving free medical attention, including members of their families. (However, it is not clear what types of medical services are rendered free to them and their dependents. Neither is it clear whether this benefit applies only to immediate family members or includes extended family members.) As reported, the DOH had recruited and trained 350,000 BHWs by end 1985.

Apparently, at least two critical areas must be examined to achieve a more effective delivery of health services to the rural areas: (1) the establishment of a sufficient number of RHUs, especially in far-flung areas; and (2) complementing the RHUs by a corresponding number of "appropriate"[11] and qualified health personnel. It must be pointed out that, contrary to general perceptions, there is no ideal fixed ratio of health manpower to population since many important factors that change over time must first be considered. Among these are the literacy level and economic status of the population, the existing ethics and norms in the community, and its disease structure (Azurin 1988).

E. *Regional Distribution of Health Manpower*

As an initial estimate, one may take a cursory look into the distribution of the different categories of health manpower across the regions (Tables 12A and 12B). However, one must keep in mind that it is more important to look into the ratio of each type of health manpower to population (Table 12C) and compare it with its respective service standards[12].

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11. That is, appropriate to the dominant health situation/needs and norms in the community and to the available resources of the majority of the local population.

12. Based on the World Bank (1979), NEDA (1982), and a pilot study on the utilization of health services in Rizal (1983), the following are the service standards for each category of health manpower in the RHUs:

(a) 1 nurse per 20,000 population
(b) 1 midwife per 5,000 to 10,000 population
(c) 1 rural health physician per 10,000 to 20,000 population
(d) 1 rural sanitary inspector per 20,000 population
(e) 1 public health dentist per 20,000 population

Table 12a
DOH Manpower Complement* as of May 1988

Occupational Grouping	No.	% of Total
1. Nurses	12,166	17.94%
2. Midwives	10,307	15.20%
3. Physicians	9,137	13.47%
4. Rural Sanitation Inspectors	2,035	3.00%
5. Med. Technologists/Technicians	1,806	2.66%
6. Dentists	1,165	1.72%
7. Pharmacists	730	1.08%
8. Dietitians	450	0.66%
9. Medical Social Worker	355	0.52%
10. Nutritionists	236	0.35%
11. Health Educators	136	0.20%
12. Others	29,301	43.20%
Total	67,824	100.00%

*Of the Central Office, Regional Health Offices, and Special Hospitals.

Source: Department of Health, Management Advisory Service.

Table 12b
DOH Manpower Complement, by Region as of May 1988

Occupational Grouping	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Central Office	Special Hospitals	Total
1. Physicians	235	871	523	798	987	561	645	596	558	401	505	403	369	181	1,504	9,137
2. Dentists	27	108	81	110	156	82	90	85	92	57	43	106	50	26	52	1,165
3. Nurses	176	1,138	777	1,041	1,310	737	962	922	857	582	678	603	464	52	1,867	12,166
4. Midwives	183	1,084	654	1,007	1,128	778	985	872	746	618	776	678	650	1	147	10,307
5. Medical technologists/ technicians	26	134	92	174	158	208	100	146	126	106	129	88	75	54	190	1,806
6. Rural sanitation inspectors	104	178	144	184	284	157	202	140	163	135	134	112	98	0	0	2,035
7. Pharmacists	5	56	53	50	76	49	55	45	52	36	34	40	30	63	86	730
8. Nutritionists	18	16	10	13	46	15	20	10	9	11	11	10	7	23	17	236
9. Dietitians	4	40	42	42	49	37	39	36	36	17	25	18	16	1	48	450
10. Health educators	8	54	4	9	12	8	9	7	7	5	9	9	7	38	0	136
11. Medical social workers	2	24	20	22	39	10	32	27	22	12	12	30	10	3	90	355
12. Others	330	2,262	1,846	2,029	3,382	1,649	1,997	1,642	1,877	1,241	1,630	1,399	958	2,161	4,898	29,301
Total	1,118	5,915	4,246	5,479	7,627	4,291	5,136	4,528	4,545	3,221	3,986	3,496	2,734	2,603	8,899	67,824

Source: Department of Health, Management Advisory Service.

Table 12c
Ratio of DOH Manpower Complement to Population as of May 1988

	Occupational Grouping	Ratio to Population
1.	Nurses	1:4,827
2.	Midwives	1:5,697
3.	Physicians	1:6,427
4.	Rural sanitation inspectors	1:28,856
5.	Medical technologists/technicians	1:32,514
6.	Dentists	1:50,404
7.	Pharmacists	1:80,440
8.	Dietitians	1:130,492
9.	Medical social worker	1:165,412
10.	Nutritionists	1:248,819
11.	Health educators	1:431,774
12.	Others (e.g., barangay health workers)	1:2,004

Note: Population figures used are year-end projections (computed by the National Statistics Office (NSO) by assuming moderate fertility decline and moderate mortality decline).

It is clear from Table 12C that, nationwide, not all (although most) of these standards were met. But these findings should not be considered conclusive. The deficiencies of those categories which did not meet standards may have been made up for by their private sector counterparts. Or even if the standards were met, there may be overlapping or uncovered areas. Moreover, these health manpower figures include even those not assigned in the rural areas, such as many of the dentists. Only 695 of them were actually fielded in the rural areas (i.e., mobile dentists who go from one barangay to another and who render mostly simple curative care because of lack of materials and equipment, while the rest were stationed in higher level health facilities like the special and provincial hospitals).

Another important area which must be considered is the quality[13] of these health manpower.

On top of these considerations, Azurin (1988) raised a key question: Would increasing the number of health personnel give a corresponding improvement in health status? In the final analysis, what counts most is the ultimate improvement in the health of the people. It must be stressed that health welfare does not rest solely on an effective and efficient health delivery system, but also on the income (i.e., paying capacity) of the populace. A rough estimate of this would be the per capita gross regional product, preferably measured in constant prices.

IV. DESCRIPTION OF DATA AND METHODOLOGY

This chapter starts with a description of the data used in the study, followed by a discussion of the distribution of income, then by a cursory presentation of how various income groups use health services. The last section deals with methodology.

A. *The Data*

This study used the 1981 National Health Survey data.[14] The survey covered a sample population of 8,481 households, out of which 8,046 were actually interviewed, reflecting a 95 percent coverage.[15] For the statistical tables found in this chapter and in Appendix G, expansion factors were applied to the data in order to derive estimates for the larger population from which the sample households were selected. The expansion factors are adopted from the National Statistics Office (NSO). They are actually sampling weights applied to each sample household. They reflect the probability of a household being selected for the survey sample[16]. The total number of households, after applying the expansion factors, is 8,364,734.

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13. Meaning, they should be able to perform their assigned task effectively and efficiently.

14. At the time of this writing, the 1987 National Health Survey still has to come up with a public user's file. Even if this official file were available, tapping it for this study would be inadequate because the 1987 survey contains no price (or medical expense) variable, which is the factor being investigated by this study to determine if price elasticity (or sensitivity) varies across income groups.

15. A two-stage sampling design was used to draw the respondents. The barangay served as the primary sampling unit, and the household, the secondary. A total of 8,481 sample households from 652 sample barangays were targeted as respondents. Of the 652 barangays, 638 were actually enumerated, thus yielding a 98 percent coverage.

16. In particular, the sample weights assigned were equal to the inverse of the joint probability of selection in the two stages of sample selection.

The morbidity section of the questionnaires is crucial to this study because it is where data on child and curative care could be culled from and studied against a set of factors, both economic and non-economic; and, more significantly, because it is the only section that contains information on price--the major factor under investigation. It is important to stress that the principal aim of this study is to determine if price elasticity (or sensitivity) varies across income classes[17].

The third part of the questionnaire's morbidity section records the illnesses of those who recovered during the preceding week, regardless of the onset of illness. It also provides information on the affected household members. The information include such items as diagnosis, place of first consultation, attendant, number of days absent from work or school, and medical expenses. By combining such information with the social attributes of the household members (e.g., sex, age, education, income) and with the general data on health facilities (e.g., travel time), this study was able to come up with individual and facility characteristics, both economic and non-economic, which affect the child and adult curative care.

B. *Distribution of Income*

Income, as collated in the 1981 National Health Survey, refers to total income, in cash and in kind, of specific household members for 1980. We added up the total income of all family members[18] to obtain the total family income, which was then divided by the number of family members to establish that the welfare of the family is not independent of the number of individual members. Finally, all families were ranked according to family per capita income, and the ordered distribution divided into quartiles of equal population. The latter became the basic reference variable in this study. Distribution of income across quartiles is presented in Tables 13-26.[19]

Table 13 shows that, nationwide, the mean annual family per capita income in 1981 was P2,063 (column 5, row 5). The highest annual family per capita income observed in the country's top quartile was P333,333 (column 6, row 4). The poorest quartile of families earned a maximum annual per capita income of only P214 (column 6, row 1). In contrast, a family had to earn an annual per capita income of at least P1,387 (column 6, row 4) in order to be classified among the top 25 percent.

In the NCR, however, a family had to earn more than the national minimum annual per capita income of P1,387 in order to be included in the top quartile. In particular, the lowest for the top quartile in the NCR was P3,750, while the highest was P134,775 (Table 14: column 6, row 4). On the other hand, the poorest quartile of families earned a maximum annual per capita income of only P750 (column 6, row 1).

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17. Maternal and dental care sections are also interesting. However, without price,the regression models built around them may be misspecified, and the issue of user fees being regressive could not be properly examined. Nevertheless, model estimation was still done. Statistical tables describing maternal and dental care in general are available but not included here.

18. As we have said earlier, the "family" is different from "household." The latter includes domestic househelps and other non-family members who may be living with the family.

19. Similar tables were done for income in cash and in kind. The original purpose was to separate income into two variables--cash and kind -- for the model estimation. However, the income distribution tables for these variables showed that all families in practically all regions belonging to the first three quartiles did not have income in kind. On the other hand, all families in Regions IX and XII belonging to the first quartile did not earn income in cash. Thus, income was not anymore separated into two types during model estimation.

Table 13
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for the Philippines

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF ANNUAL MEAN FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (PHIL.) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL ANNUAL INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	13,024,670	2,091,430	6.2	64	0 - 214	1.0	430	0 - 3,000
2	13,147,288	2,090,763	6.3	390	214 - 600	5.8	2,442	300 - 8,020
3	12,217,726	2,091,709	5.8	922	600 - 1,386	12.6	5,341	700 - 21,974
4	11,436,351	2,090,832	5.5	6,877	1,387 - 333,333	80.6	34,045	1,400 - 1,500,000
ALL	49,826,034	8,364,734	6.0	2,063	———	100.0	10,563	———

Table 14
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for the National Capital Region

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (NCR) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	1,549,231	263,257	5.9	213	0 - 750	1.6	1,274	0 - 6,000
2	1,619,184	261,108	6.2	1,313	750 - 1,800	10.1	8,062	1,500 - 29,000
3	1,549,649	260,367	6.0	2,653	1,800 - 3,750	19.6	15,786	3,000 - 44,450
4	1,421,799	261,691	5.4	10,006	3,750 - 134,775	68.7	54,904	5,400 - 808,648
ALL	6,139,863	1,046,423	5.9	3,544	———	100.0	19,991	———

In Table 15, the richest family in Region I enjoyed an annual per capita income of P150,000, while the richest family in the poorest quartile earned a maximum of only P200 (column 6, row 4). This latter income was a thousand pesos short of the minimum requirement for inclusion among the top 25 percent of the region.

In Region II, the highest annual per capita income of a family in the top quartile was P261,508 (Table 16: column 6, row 4). The poorest quartile of families earned a maximum annual income of P71 per capita (column 6, row 1). The minimum annual per capita income needed for a family to be classified among the top 25 percent was P965 (column 6, row 4).

The highest annual family per capita income observed in the top quartile of Region III was P33,333 (Table 17: column 6, row 4). The poorest quartile of families earned a maximum of P250 (column 6, row 1). A family had to earn at least P1,624 annual per capita income to be included in the top quartile (column 6, row 4).

In Region IV, the richest family in the top quartile earned an annual per capita income of P75,000 (Table 18: column 6, row 4), in contrast to the maximum P200 (column 6, row 1) earned by the richest family in the poorest quartile. It needed at least P1,462 (column 6, row 4) in annual per capita income for a family to be classified among the top 25 percent.

The mean annual family per capita income for Region V was only P956 (Table 19: column 5, row 5). The poorest quartile of families earned an average annual per capita income of only P55 (column 5, row 1) and a maximum of P167 (column 6, row 1). In this low-income region, it took a family to earn at least P800 (column 6, row 4) in order to be included in the top quartile, in which the highest per capita income was P68,202 (column 6, row 4).

In Region VI, the highest annual family per capita income reported was P333,333 (Table 20: column 6, row 4). It was also the highest in the country. However, the poorest quartile of families earned a maximum annual per capita income of only P238 (column 6, row 1).

To be among the top 25 percent in Region VII, a family had to earn an annual per capita income of at least P1,000 (Table 21: (column 6, row 4). On the average, the top 25 percent of families earned P9,094 (column 5, row 4) per capita. The richest family in the top quartile earned an annual per capita income of P243,333 (column 6, row 4). On the other hand, the richest among the poorest quartile of families reported an annual per capita income of only P222 (column 6, row 1).

Among all regions, Region VIII, which had the lowest GDP per capita in 1981, also had the lowest mean family income per capita (Table 22: column 5, row 5) that year. The highest annual family per capita income observed was P54,167 (column 6, row 4), while the poorest quartile of families earned a maximum of P145 (column 6, row 1).

The poorest quartile of families in Region IX reported zero income (Table 23: column 6, row 1), whether in cash or in kind. The second poorest quartile earned a maximum of P260 (column 6, row 2) in annual per capita income. The region's highest family per capita income was P76,503 (column 6, row 4).

In Region X, the highest annual family per capita income in the top quartile was P120,000 (Table 24: column 6, row 4). The poorest quartile of families earned a maximum of P317

Table 15
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region I

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION 1) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	883,086	147,938	6.0	48	0 - 200	0.8	338	0 - 2,000
2	980,001	147,794	6.6	367	220 - 516	5.9	2,413	300 - 6,500
3	937,508	147,997	6.3	850	533 - 1,189	13.1	5,323	1,000 - 15,100
4	809,086	147,890	5.5	6,499	1,200 - 150,000	80.2	32,654	2,500 - 805,012
ALL	3,609,681	591,618	6.1	1,941	----------	100.0	10,182	----------

Table 16
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region II

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION II) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	568,149	99,503	5.7	12	0 - 71	0.1	78	0 - 560
2	625,201	99,219	6.3	187	75 - 371	2.2	1,204	90 - 4,450
3	583,307	98,864	5.9	599	375 - 950	6.5	3,489	800 - 12,000
4	504,791	99,902	5.1	16,148	965 - 261,508	91.1	48,556	1,000 - 1,500,000
ALL	2,281,448	397,488	5.7	4,257	----------	100.0	13,392	----------

Table 17
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region III

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION III) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	1,259,901	209,144	6.0	71	0 - 250	1.4	470	0 - 3,000
2	1,373,704	210,400	6.5	504	252 - 750	9.9	3,263	500 - 9,000
3	1,190,993	209,086	5.7	1,118	750 - 1,608	18.9	6,249	1,000 - 19,200
4	1,116,156	209,398	5.3	4,388	1,624 - 33,333	69.8	23,111	2,000 - 200,000
ALL	4,940,753	838,027	5.9	1,519	———	100.0	8,270	———

Table 18
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region IV

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION IV) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	1,705,830	272,981	6.2	61	0 - 200	1.5	425	0 - 2,100
2	1,635,485	271,528	6.0	389	200 - 600	8.4	2,338	500 - 8,000
3	1,574,138	273,352	5.8	946	613 - 1,440	19.7	5,414	1,000 - 19,600
4	1,435,017	272,503	5.3	3,791	1,462 - 75,000	70.3	19,405	1,500 - 600,000
ALL	6,350,469	1,090,363	5.8	1,297	----------	100.0	6,896	----------

Table 19
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region V

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION V) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	924,223	137,916	6.7	55	0 - 167	1.9	398	0 - 2,012
2	976,631	140,041	7.0	293	167 - 412	9.9	2,001	500 - 4,920
3	880,212	138,018	6.4	595	417 - 800	18.3	3,780	1,000 - 9,300
4	778,851	138,871	5.6	2,880	800 - 68,202	69.9	14,309	1,600 - 341,010
ALL	3,559,916	554,845	6.4	956	---------	100.0	5,126	---------

Table 20
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region VI

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION VI) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	1,296,172	205,692	6.3	99	0 - 238	1.3	668	0 - 2,600
2	1,217,885	204,857	5.9	370	240 - 500	4.3	2,187	300 - 5,000
3	1,251,589	205,252	6.1	688	500 - 986	8.2	4,157	800 - 9,860
4	1,170,880	207,416	5.6	9,855	988 - 333,333	86.2	43,221	1,000 - 1,000,000
ALL	4,936,526	823,217	6.0	2,771	----------	100.0	12,638	----------

Table 21
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region VII

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION VII) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	983,379	179,182	5.5	75	0 - 222	0.9	484	0 - 3,000
2	963,050	179,064	5.4	367	225 - 500	3.6	1,960	300 - 5,150
3	975,408	179,282	5.4	769	500 - 1,000	7.5	4,004	530 - 10,000
4.	961,530	178,808	5.4	9,094	1,000 - 243,333	88.0	47,339	1,200 - 825,124
ALL	3,883,367	716,335	5.4	2,573	----------	100.0	13,430	----------

Table 22
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region VIII

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION VIII) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	780,904	127,652	6.1	51	0 - 145	2.1	354	0 - 1,300
2	761,753	126,594	6.0	224	150 - 314	7.7	1,342	200 - 3,300
3	668,342	127,212	5.3	474	320 - 667	14.6	2,513	505 - 7,400
4	651,607	127,690	5.1	2,070	667 - 54,167	75.6	13,002	800 - 650,000
ALL	2,862,606	509,149	5.6	706	----------	100.0	4,311	----------

Table 23
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region IX

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION IX) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	741,290	97,300	7.6	0	0 - 0	0.0	0	0 - 0
2	647,541	97,023	6.7	128	0 - 260	4.9	829	0 - 3,050
3	619,783	97,860	6.3	456	273 - 720	17.6	2,926	300 - 7,823
4	592,675	97,289	6.1	2,253	750 - 76,503	77.5	12,978	800 - 500,112
ALL	2,601,289	389,473	6.7	709	———	100.0	4,184	———

Table 24
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region X

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION X) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	791,094	117,227	6.7	115	0 - 317	1.9	827	0 - 3,400
2	767,807	117,454	6.5	479	320 - 667	7.2	3,099	800 - 7,600
3	663,399	118,201	5.6	973	667 - 1,387	12.5	5,338	1,200 - 14,600
4	636,805	117,158	5.4	6,626	1,387 - 120,000	78.3	33,661	2,000 - 600,000
ALL	2,859,105	470,039	6.1	2,045	———	100.0	10,713	———

(column 6, row 1). In contrast, a family needed to earn an annual per capita income of at least P1,387 (column 6, row 4) to be considered among the top 25 percent.

The richest family in the top quartile of Region XI earned an annual per capita income of P140,000 (Table 25: column 6, row 4). The richest family in the poorest quartile earned a maximum of P333 (column 6, row 1), which was a thousand pesos below the minimum (column 6, row 4) required in order for a family to be classified among the top 25 percent in the region.

Finally, the mean annual family per capita income was P1,370 in Region XII (Table 26: column 5, row 5). The richest family in the top quartile earned P112,500 (column 6, row 4), while the poorest quartile of families earned a maximum of P200 (column 6, row 1). A family had to earn at least P1,071 in annual per capita income (column 6, row 4) to be classified among the top 25 percent.

C. *Description of Health Service Use*

Child Curative Care. Of the sick children who recovered during the week after the survey, 41 percent had home consultation, 26 percent consulted government facilities (government hospitals, RHUs/puericulture centers, or BHSs), 16 percent visited private facilities (private hospitals or clinics), and 17 percent gave no response.

In Table 27A, Region XII had the highest percentage of home consultation (66 percent). Region X had the highest percentage of consultation in government facilities (50 percent), while Region XI had the lowest (10 percent). The NCR had the highest percentage of consultation in private facilities (30 percent), while Region X had the lowest (6 percent).

Of the poorest quartile children, 31 percent visited government facilities, 15 percent visited private facilities, 46 percent had home consultation, and 9 percent gave no response. Region III's bottom quartile had the highest percentage of consultation in government facilities (55 percent), while Region I's had the lowest (13 percent). Region IX's lowest quartile had the highest consultation in private facilities (34 percent), while Region X's had the lowest.

Among the second quartile children, 24 percent visited government facilities, 9 percent visited private facilities, 38 percent had home consultation, and 29 percent had no response. Region VIII's second quartile had the highest percentage of consultation in government facilities (52 percent), while Region V's had the lowest (7 percent). Region III's second quartile had the highest percentage of consultation in private facilities (19 percent), while Region VIII's had the lowest (0 percent).

Of the third quartile children, 25 percent went to government facilities, 14 percent to private facilities, 48 percent had home consultation, and 14 percent gave no response. Region VIII's third quartile had the greatest percentage of consultation in government facilities (70 percent), while Region XI's had the smallest (4 percent). The NCR's third quartile had the highest percentage of consultation in private facilities (49 percent), while Region VII had the lowest (0 percent).

Of the top quartile children, 23 percent went to government facilities, 34 percent visited private facilities, 33 percent had home consultation, and 10 percent gave no response. Region X's richest quartile had the highest percentage of consultation in government facilities (66 percent), while Region XII's had the lowest (0 percent). Region III's top quartile had the highest percent-

Table 25
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region XI

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION XI) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	946,770	142,785	6.6	140	0 - 333	2.2	1,001	0 - 3,501
2	897,198	141,946	6.3	518	333 - 714	7.1	3,287	1,000 - 12,000
3	891,661	142,774	6.2	993	714 - 1,333	13.3	6,103	1,000 - 15,000
4	742,892	142,499	5.2	7,213	1,333 - 140,000	77.3	35,480	2,000 - 700,000
ALL	3,478,521	570,004	6.1	2,216	———	100.0	11,468	———

Table 26
Annual Family Per Capita Income, Annual Family Income, Family Size, Number of Families, Number of Persons by Quartile of Annual Family Per Capita Income for Region XII

QUARTILE	NO. OF PERSONS (1)	NO. OF FAMILIES (2)	SIZE OF FAMILY (3)	MEAN ANNUAL FAMILY INCOME PER CAPITA (4)	RANGE OF MEAN ANNUAL FAMILY INCOME PER CAPITA (5)	SHARE OF QUARTILE'S TOTAL ANNUAL INCOME TO (REGION XII) TOTAL ANNUAL INCOME (6)	MEAN ANNUAL FAMILY INCOME (7)	RANGE OF ANNUAL FAMILY INCOME (8)
1	610,922	91,379	6.7	45	0 - 200	0.8	287	0 - 2,000
2	657,274	92,176	7.1	383	200 - 582	7.4	2,720	500 - 6,000
3	516,071	92,489	5.6	797	583 - 1,070	11.9	4,362	1,000 - 17,400
4	538,221	91,707	5.9	4,261	1,071 - 112,500	79.9	29,428	2,300 - 900,000
ALL	2,322,487	367,752	6.3	1,370	———	100.0	9,189	———

Table 27a
Number and Percent of Sick Children Who Recovered during the Preceding Week by Place of First Consultation, by Quartile, and by Region

QUARTILE AND PLACE OF FIRST CONSULTATION	PHILIPPINES		NCR		REGION I		REGION II		REGION III		REGION IV		REGION V	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
QUARTILE 1														
GOVFAC*	128,374	30.6	21,210	37.1	3,085	12.6	12,455	36.2	10,293	55.1	8,295	15.6	11,703	41.9
PRIVFAC**	63,046	15.0	9,024	15.8	825	3.4	3,156	9.2	1,176	6.3	8,415	15.9	2,251	8.1
HOME	191,026	45.5	13,341	23.3	18,768	76.9	17,965	52.2	7,209	38.6	20,899	39.4	13,438	48.1
NOT STATED	37,014	8.8	13,652	23.9	1,716	7.0	843	2.4	-	-	15,479	29.2	534	1.9
SUB-TOTAL	419,460	100.0	57,227	100.0	24,394	100.0	34,420	100.0	18,678	100.0	53,087	100.0	27,926	100.0
QUARTILE 2														
GOVFAC*	118,277	23.6	4,188	21.9	17,783	50.8	6,496	40.0	4,560	15.0	14,502	20.5	2,159	6.6
PRIVFAC**	47,154	9.4	3,307	17.3	5,995	17.1	1,936	11.9	5,762	19.0	12,209	17.3	3,375	10.4
HOME	189,701	37.8	8,869	46.4	10,452	29.9	6,058	37.3	15,591	51.4	35,794	50.6	17,491	53.8
NOT STATED	146,269	29.2	2,761	14.4	772	2.2	1,731	10.7	4,437	14.6	8,228	11.6	9,463	29.1
SUB-TOTAL	501,402	100.0	19,125	100.0	35,002	100.0	16,221	100.0	30,351	100.0	70,733	100.0	32,488	100.0
QUARTILE 3														
GOVFAC*	78,590	24.7	4,521	13.4	10,353	56.2	5,172	46.1	7,804	34.5	12,844	25.7	3,624	11.9
PRIVFAC**	44,552	14.0	16,632	49.4	60	0.3	1,516	13.5	3,961	17.5	10,691	21.4	3,777	12.4
HOME	151,267	47.5	9,173	27.2	5,734	31.1	3,615	32.2	10,887	48.0	23,258	46.6	17,858	58.4
NOT STATED	44,380	13.9	3,363	10.0	2,279	12.4	925	8.2	-	-	3,120	6.3	5,302	17.3
SUB-TOTAL	318,790	100.0	33,689	100.0	18,426	100.0	11,228	100.0	22,642	100.0	49,913	100.0	30,562	100.0
QUARTILE 4														
GOVFAC*	54,568	23.2	1,145	4.0	5,825	26.4	6,631	56.3	4,488	27.2	1,363	5.0	5,867	23.9
PRIVFAC**	79,765	33.9	13,060	45.7	2,953	13.4	2,329	19.8	10,018	60.8	9,389	34.3	5,869	23.9
HOME	77,350	32.9	12,289	43.0	11,175	50.6	2,825	24.0	1,974	12.0	13,029	47.6	12,778	52.1
NOT STATED	23,266	9.9	2,089	7.3	2,140	9.7	-	-	-	-	3,613	13.2	-	-
SUB-TOTAL	234,950	100.0	28,582	100.0	22,093	100.0	11,785	100.0	16,479	100.0	27,394	100.0	24,514	100.0
ALL														
GOVFAC*	379,810	25.8	31,063	22.4	37,046	37.1	30,755	41.8	27,145	30.8	37,004	18.4	23,354	20.2
PRIVFAC**	234,517	15.9	42,022	30.3	9,832	9.8	8,938	12.1	20,917	23.7	40,704	20.2	15,272	13.2
HOME	609,344	41.3	43,672	31.5	46,130	46.2	30,463	41.4	35,651	40.4	92,980	46.2	61,564	53.3
NOT STATED	250,930	17.0	21,865	15.8	6,907	6.9	3,499	4.8	4,437	5.0	30,439	15.1	15,300	13.2
TOTAL	1,474,601	100.0	138,623	100.0	99,914	100.0	73,654	100.0	88,150	100.0	201,127	100.0	115,490	100.0

Divisor of percentage columns: Total number of sick children in Region(r), Quartile (q) who recovered during the preceeding week

*Government Facilities (Government hospital, rural health units/puericulture centers, or barangay health stations)

**Private Facilities (Private hospital or clinic)

Table 27a (continued)

QUARTILE AND PLACE OF FIRST CONSULTATION	REGION VI		REGION VII		REGION VIII		REGION IX		REGION X		REGION XI		REGION XII	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
QUARTILE 1														
GOVFAC‡	13,076	20.2	9,694	41.2	13,300	29.7	7,312	32.8	13,986	52.2	4,695	22.6	5,573	31.3
PRIVFAC‡‡	13,082	20.2	3,526	15.0	4,974	11.1	7,669	34.4	354	1.3	5,001	24.0	3,171	17.8
HOME	37,428	57.9	10,283	43.8	23,619	52.7	5,788	25.9	12,440	46.5	8,565	41.2	8,320	46.7
NOT STATED	1,088	1.7	-	-	2,926	6.5	1,547	6.9	-	-	2,544	12.2	766	4.3
SUB-TOTAL	64,675	100.0	23,503	100.0	44,820	100.0	22,316	100.0	26,780	100.0	20,804	100.0	17,830	100.0
QUARTILE 2														
GOVFAC‡	3,925	14.8	9,827	9.4	10,576	52.1	803	8.9	10,966	43.2	1,799	9.1	3,028	10.0
PRIVFAC‡‡	2,361	8.9	5,154	4.9	-	-	357	3.9	708	2.8	3,050	15.4	3,672	12.1
HOME	19,234	72.3	7,888	7.5	8,102	39.9	4,959	54.9	11,826	46.5	10,146	51.2	23,687	78.0
NOT STATED	1,088	4.1	81,965	78.2	1,619	8.0	2,908	32.2	1,912	7.5	4,816	24.3	-	-
SUB-TOTAL	26,608	100.0	104,833	100.0	20,296	100.0	9,027	100.0	25,412	100.0	19,810	100.0	30,387	100.0
QUARTILE 3														
GOVFAC‡	13,802	39.2	6,375	12.2	15,207	70.4	1,636	12.3	12,709	46.3	715	4.1	3,851	22.0
PRIVFAC‡‡	5,630	16.0	-	-	1,395	6.5	1,568	11.8	2,431	8.8	4,730	27.5	1,680	9.6
HOME	15,812	44.9	3,995	7.6	5,011	23.2	6,140	46.1	11,137	40.5	11,388	66.1	11,939	68.3
NOT STATED	-	-	42,022	80.2	-	-	3,969	29.8	1,195	4.3	396	2.3	-	-
SUB-TOTAL	35,245	100.0	52,392	100.0	21,614	100.0	13,312	100.0	27,471	100.0	17,229	100.0	17,469	100.0
QUARTILE 4														
GOVFAC‡	1,446	8.8	1,903	12.8	13,710	45.7	2,868	21.0	9,843	66.1	819	3.9	-	-
PRIVFAC‡‡	3,632	22.1	3,811	25.6	1,120	3.7	5,661	41.4	1,957	13.1	7,648	36.8	2,493	48.2
HOME	8,642	52.7	9,175	61.6	6,163	20.5	5,151	37.7	2,420	16.2	6,950	33.5	2,676	51.8
NOT STATED	2,691	16.4	-	-	9,005	30.0	-	-	674	4.5	5,352	25.8	-	-
SUB-TOTAL	16,411	100.0	14,889	100.0	29,999	100.0	13,680	100.0	14,894	100.0	20,768	100.0	5,169	100.0
ALL														
GOVFAC‡	32,249	22.6	27,799	14.2	52,794	45.2	12,619	21.6	47,503	50.2	8,027	10.2	12,452	17.6
PRIVFAC‡‡	24,705	17.3	12,490	6.4	7,490	6.4	15,254	26.1	5,450	5.8	20,428	26.0	11,016	15.5
HOME	81,118	56.8	31,341	16.0	42,895	36.7	22,038	37.8	37,823	40.0	37,048	47.1	46,622	65.8
NOT STATED	4,866	3.4	123,986	63.4	13,550	11.6	8,425	14.4	3,781	4.0	13,108	16.7	766	1.1
TOTAL	142,938	100.0	195,617	100.0	116,729	100.0	58,335	100.0	94,557	100.0	78,611	100.0	70,855	100.0

Divisor of percentage columns: Total number of sick children in Region(r), Quartile (q) who recovered during the preceeding week

‡Government Facilities (Government hospital, rural health units/puericulture centers, or barangay health stations)

‡‡Private Facilities (Private hospital or clinic)

age of consultation in private facilities (61 percent), while Region VIII's had the lowest (4 percent).

Adult Curative Care. In Table 27B, of the sick adults who recovered during the week before the survey, 26 percent went to government facilities, 19 percent visited private facilities, 45 percent had home consultation, and 10 percent gave no response. Region IX had the highest percentage of consultation in government facilities (55 percent), while Region XI had the lowest (9 percent). Region XI, however, had the highest percentage of consultation in private facilities (34 percent), while Region VIII had the lowest (5 percent).

Of the poorest quartile adults, 29 percent consulted government facilities, 16 percent went to private facilities, 46 percent had home consultation, and 10 percent gave no response. The NCR's bottom quartile adults had the highest consultation in government facilities (56 percent), while Region XII's had the lowest (7 percent). However, among the poorest quartiles across the regions, Region XII had the highest percentage of adult out- patients who visited private facilities (50 percent); Region VIII and IX had the lowest (both at 0 percent).

Among the poorest quartile adults, 24 percent went to government facilities, 13 percent visited private facilities, 58 percent had home consultation, while 6 percent gave no reply. Region V had the highest percentage of adult out-patients in government facilities (47 percent), while Region VII had the lowest (6 percent). Region VII, however, had the highest percentage of consultation in private facilities (27 percent), while Region VIII had the lowest (2 percent).

Of the third quartile adults, 30 percent consulted government facilities, 21 percent visited private facilities, 42 percent had home consultation, and 6 percent indicated no response. Region X's third quartile had the highest percentage of consultation in government facilities (59 percent), while Region XI's had the lowest (2 percent). Region XII had the highest percentage of adult outpatients in private facilities (70 percent), while Region X had the lowest (2 percent).

Among the top quartile adults, 20 percent consulted government facilities, 25 percent went to private facilities, 37 percent had home consultation, and 18 percent gave no response. Region IX's top quartile had the highest percentage of consultation in government facilities (74 percent), while Region XII had the lowest (0 percent). Region III's richest quartile had the highest percentage of consultation in private facilities (55 percent), while Region XII had the lowest (4 percent).

D. *Methodology*

The study constructed the following model of provider choice in child and adult curative care:

$$Z = \log \frac{P}{1-P} = \alpha + \beta_0 X + \beta_1 D_1 X_1 + \beta_2 D_2 X_2 + \beta_3 D_3 X_3 + \beta_4 I + \beta_5 A + \beta_6 B +$$

$$\beta_7 S + \beta_8 F + \beta_9 E + \beta_{10} L + \beta_{11} G + \beta_{12} Q + \beta_{13} T$$

where P=probability that the individual will visit a particular facility

X = logarithm[20] of price

20. All logarithms are base e unless otherwise specified.

Table 27b
Number and Percent of Sick Adults Who Recovered during the Preceding Week by Place of First Consultation, by Quartile, and by Region

QUARTILE AND PLACE OF FIRST CONSULTATION	PHILIPPINES		NCR		REGION I		REGION II		REGION III		REGION IV		REGION V	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
QUARTILE 1														
GOVFAC#	82,130	28.9	8,020	56.2	5,548	17.1	2,940	13.5	9,599	52.2	6,780	23.0	7,503	37.4
PRIVFAC##	44,256	15.6	2,256	15.8	10,217	31.5	2,020	9.3	3,370	18.3	4,545	15.4	1,752	8.7
HOME	130,278	45.8	3,176	22.2	14,876	45.9	16,748	77.2	1,836	10.0	14,356	48.6	9,792	48.8
NOT STATED	27,726	9.7	824	5.8	1,793	5.5	-	-	3,577	19.5	3,831	13.0	1,028	5.1
SUB-TOTAL	284,389	100.0	14,276	100.0	32,434	100.0	21,708	100.0	18,382	100.0	29,512	100.0	20,076	100.0
QUARTILE 2														
GOVFAC#	58,382	23.6	9,049	29.4	8,032	24.1	2,781	39.2	5,823	27.7	4,577	17.4	13,735	47.0
PRIVFAC##	31,484	12.7	4,828	15.7	4,189	12.6	1,561	22.0	1,546	7.4	5,316	20.2	2,125	7.3
HOME	142,868	57.7	14,177	46.0	18,957	56.8	2,745	38.7	10,601	50.5	13,073	49.8	10,545	36.1
NOT STATED	14,888	6.0	2,757	8.9	2,200	6.6	-	-	3,034	14.4	3,289	12.5	2,844	9.7
SUB-TOTAL	247,573	100.0	30,810	100.0	33,378	100.0	7,087	100.0	21,006	100.0	26,255	100.0	29,250	100.0
QUARTILE 3														
GOVFAC#	78,503	30.5	5,656	11.1	10,254	44.2	1,080	19.5	728	4.1	13,321	49.6	2,802	13.3
PRIVFAC##	54,849	21.3	12,377	23.4	3,767	16.2	614	11.1	4,377	24.6	3,384	12.6	2,813	13.4
HOME	107,227	41.7	12,225	23.1	4,841	20.9	3,848	69.4	9,412	53.0	8,123	30.2	13,638	64.9
NOT STATED	16,629	6.5	22,449	42.4	4,340	18.7	-	-	3,249	18.3	2,049	7.6	1,773	8.4
SUB-TOTAL	257,248	100.0	52,986	100.0	23,202	100.0	5,543	100.0	17,766	100.0	26,877	100.0	21,026	100.0
QUARTILE 4														
GOVFAC#	63,165	20.4	2,529	7.3	9,891	36.6	6,155	41.5	2,198	13.9	5,191	10.9	3,688	19.4
PRIVFAC##	76,762	24.8	8,322	24.0	7,022	26.0	5,360	36.1	8,696	55.0	14,720	31.0	5,471	28.8
HOME	114,390	36.9	15,669	45.2	4,656	17.3	2,224	15.0	3,040	19.2	20,662	43.5	9,379	49.3
NOT STATED	55,627	17.9	8,137	23.5	5,419	20.1	1,093	7.4	1,881	11.9	6,871	14.5	473	2.5
SUB-TOTAL	309,945	100.0	34,657	100.0	26,988	100.0	14,832	100.0	15,816	100.0	47,444	100.0	19,011	100.0
ALL														
GOVFAC#	282,190	25.7	25,455	19.2	33,724	29.1	12,957	26.4	18,350	25.1	29,869	23.0	27,727	31.0
PRIVFAC##	207,351	18.9	27,782	20.9	25,195	21.7	9,535	19.4	17,989	24.7	27,965	21.5	12,162	13.6
HOME	494,764	45.0	45,246	34.1	43,330	37.4	25,565	52.0	24,890	34.1	56,214	43.2	43,355	48.5
NOT STATED	114,870	10.5	34,166	25.8	13,752	11.9	1,093	2.2	11,741	16.1	16,040	12.3	6,118	6.8
TOTAL	1,099,175	100.0	132,650	100.0	116,002	100.0	49,170	100.0	72,970	100.0	130,088	100.0	89,362	100.0

Divisor of percentage columns: Total number of sick children in Region(r), Quartile (q) who recovered during the preceeding week

#Government Facilities (Government hospital, rural health units/puericulture centers, or barangay health stations)

##Private Facilities (Private hospital or clinic)

Table 27b (continued)

QUARTILE AND PLACE OF FIRST CONSULTATION	REGION VI		REGION VII		REGION VIII		REGION IX		REGION X		REGION XI		REGION XII	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
QUARTILE 1														
GOVFAC‡	3,558	16.4	3,590	27.6	5,344	17.5	9,947	53.7	8,410	52.1	1,921	24.2	1,621	6.7
PRIVFAC‡‡	2,275	10.5	5,033	38.7	-	-	-	-	354	2.2	1,294	16.3	12,097	50.4
HOME	14,271	65.7	4,388	33.7	19,634	64.5	1,276	6.9	6,809	42.1	4,163	52.5	9,930	41.3
NOT STATED	1,609	7.4	-	-	5,484	18.0	7,312	39.4	584	3.6	551	7.0	375	1.6
SUB-TOTAL	21,713	100.0	13,011	100.0	30,461	100.0	18,535	100.0	16,157	100.0	7,929	100.0	24,023	100.0
QUARTILE 2														
GOVFAC‡	4,195	13.3	604	5.7	4,332	40.8	1,693	20.5	7,694	38.3	2,182	19.1	7,031	31.5
PRIVFAC‡‡	3,622	11.4	2,830	26.7	160	1.5	790	9.6	2,075	10.3	791	6.9	656	2.9
HOME	23,605	74.6	3,201	30.2	6,135	57.7	4,486	54.4	10,302	51.3	8,452	74.0	14,601	65.5
NOT STATED	208	0.7	3,970	37.4	-	-	1,276	15.5	-	-	-	-	-	-
SUB-TOTAL	31,630	100.0	10,604	100.0	10,627	100.0	8,245	100.0	20,072	100.0	11,426	100.0	22,288	100.0
QUARTILE 3														
GOVFAC‡	2,872	10.6	3,127	31.4	6,083	39.6	2,422	29.3	12,399	59.3	370	1.6	2,023	12.8
PRIVFAC‡‡	3,795	14.0	2,369	23.8	2,136	13.9	290	3.5	354	1.7	14,076	59.1	11,089	70.3
HOME	18,858	69.6	3,371	33.9	6,410	41.7	5,568	67.2	8,139	39.0	9,356	39.3	2,664	16.9
NOT STATED	1,559	5.8	1,091	11.0	728	4.7	-	-	-	-	-	-	-	-
SUB-TOTAL	27,084	100.0	9,957	100.0	15,357	100.0	8,281	100.0	20,893	100.0	23,802	100.0	15,776	100.0
QUARTILE 4														
GOVFAC‡	5,186	13.1	5,493	40.7	4,760	42.3	19,452	74.3	6,965	35.8	832	5.3	-	-
PRIVFAC‡‡	5,647	14.3	933	6.9	995	8.8	3,532	13.5	5,290	27.2	3,623	23.3	598	3.8
HOME	28,445	71.8	6,456	47.9	5,487	48.8	3,194	12.2	7,182	37.0	11,019	70.8	8,761	56.3
NOT STATED	325	0.8	606	4.5	-	-	-	-	-	-	94	0.6	6,189	39.8
SUB-TOTAL	39,603	100.0	13,486	100.0	11,242	100.0	26,179	100.0	19,437	100.0	15,569	100.0	15,548	100.0
ALL														
GOVFAC‡	15,810	13.2	12,813	27.2	20,520	30.3	33,515	54.7	35,469	46.3	5,306	9.0	10,675	13.8
PRIVFAC‡‡	15,339	12.8	11,164	23.7	3,291	4.9	4,612	7.5	8,072	10.5	19,784	33.7	24,440	31.5
HOME	85,179	71.0	17,416	37.0	37,666	55.6	14,525	23.7	32,433	42.4	32,990	56.2	35,955	46.3
NOT STATED	3,702	3.1	5,666	12.0	6,211	9.2	8,588	14.0	584	0.8	645	1.1	6,564	8.5
TOTAL	120,030	100.0	47,059	100.0	67,688	100.0	61,240	100.0	76,559	100.0	58,725	100.0	77,634	100.0

Divisor of percentage columns: Total number of sick children in Region(r), Quartile (q) who recovered during the preceeding week

‡Government Facilities (Government hospital, rural health units/puericulture centers, or barangay health stations)

‡‡Private Facilities (Private hospital or clinic)

D's = dummy variables representing the income group to which it belongs; where the grouping is in per capita income quartile:

D1 = 1 Quartile 1
0 otherwise

D2 = 1 Quartile 2
0 otherwise

D3 = 1 Quartile 3
0 otherwise

I = logarithm of total family income

A = age

B = age squared

S = dummy variable representing sex:

S = 1 female
0 otherwise

F = family size

E = dummy variable representing the educational attainment of the individual (for adult care) or of the household head (for child care):

E = 1 high school graduate or above
0 otherwise

L = dummy variable for location:

L = 1 urban
0 otherwise

G = dummy variable representing gravity or seriousness of illness:

G = 1 absent from school/work for at least a day
0 otherwise

Q = dummy variable for quality of care:

Q = 1 attended by a physician
0 otherwise

T = travel time (in minutes)

The logit model was estimated using the maximum-likelihood non-linear estimation routine for a sample of 1,209 children who recovered during the week preceding the survey, as well as for a separate sample of 930 adults. In particular, the binomial logit was applied to each provider

choice, namely: GOVFAC, PRIVFAC, and HOME.[21] Each regional subsample was, in turn, subjected to such applications.

At this point, it is useful to recall that there are two principal objectives in this investigation. One is to study the factors--economic and non-economic--affecting health services. Another is to determine if price elasticity varies across income classes--in particular, if price sensitivity goes up as one goes down the income ladder.

In response to the second objective, the model given above offers an interesting feature in the dummy variables representing income groups. These dummy variables are not the usual regression equation shifters which change the intercept. Instead, they change the slope parameter, or more specifically, the price coefficient. They allow the examination of whether a person's income class affects his sensitivity to price; or, putting it differently, whether there is a difference in price elasticity between income groups. (This is similar to the statistician's test for the difference between means.) Now, sensitivity or elasticity of demand with respect to price is not immediately the coefficient of price, even though price is measured in logarithm, because the left hand side is the logarithm of the odds of choice, not the logarithm of the actual probability.

After a number of steps following econometric textbook derivations for logit models (e.g., Pindyck and Rubinfield 1981), and allowing for the quartile dummies, the formulae for elasticities are as follows: (1) $(\beta_0 + \beta_1)(1 - \bar{P})$ for the first quartile; (2) $(\beta_0 + \beta_2)(1 - \bar{P})$ for the second quartile; (3) $(\beta_0 + \beta_3)(1 - \bar{P})$ for the third quartile; and (4) $\beta_0(1 - \bar{P})$ for the fourth quartile; where $\bar{P}$ is the predicted probability of the dependent variable.

Similarly, regional quartile elasticities are computed after estimating an equation for each region. The study did not use regional dummies to avoid the problem of having too many dummies (since there are thirteen regions in the Philippines) which econometricians call nuisance variables because they give more trouble than information. Besides, the basic reference variable is the income quartile, not the region.[22]

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21. The study also used the multinomial logit model. It is worth noting that travel time does not appear among the explanatory variables in the multinomial logit model. Travel time is zero for those who had HOME consultation. Including travel time in the list of explanatory variables would lead to singular determinants, making the coefficients inestimable. This difficulty is not encountered in the binomial logit model since the explanatory variables in each equation (GOVFAC, PRIVFAC, HOME) can be non-identical.

Note that in the binomial logit, the last choice (HOME) is also estimated. The coefficients for this equation cannot be obtained by subtraction since the probabilities across choices do not sum to one, nor do coefficients sum to zero, nor do intercepts sum to one, even if the choices (GOVFAC, PRIVFAC, HOME) are mutually exclusive. This is due to the fact that the right hand side variables are not identical, with travel time appearing in GOVFAC and PRIVFAC but not in HOME. (those who had P=1 for the HOME equation are people who did not visit any health faclity or who were attended at home by medical/health personnel.)

22. Not only separate regional regressions were done but also separate quartile regressions at the initial stages of the study. Approximately one thousand runs were involved in coming up with elasticities for five to six types of care, in three to four facilities, across four income classes in 13 regions.

The formula for the elasticities based on probit model is $(\partial P/\partial X)(\bar{X}/\bar{P}) = \beta X/P$: where $f(Z) = \partial F/\partial Z$ is the value of standard normal density function associated with Z; $\bar{P}$ is the predicted probability of the dependent variable; $\bar{X}$ is the mean of the explanatory variable, price (not in logarithm); and $Z = \alpha + \beta x$ where α is the intercept, x is the vector of explanatory variables, and β is the vector of regression parameters.

On the first objective of this study, the economic and non- economic variables included in the model are dictated by the availability of data.

V. ESTIMATION FINDINGS

This chapter discusses the results of estimation. A provider choice model was estimated for adults, another for children. The first section of this chapter deals with the factors behind demand for health care; the second, with price elasticities across income classes.

A. *Factors Affecting Demand for Health Services*

Age. Filipino adults[23] seem to reduce their use of medical care from government facilities within a life cycle. This is indicated by the negative age squared coefficient for adults (Table 28), reflecting an inverted U-shaped curve if the logarithm of the odds of choice is plotted against age. However, the reverse is true for private facilities.

A possible explanation for this is the human capital theory. Families tend to invest more on members whose economic value (in terms of contribution to family income) is perceived to be greater. For example, among government facility users, a large proportion comes from lower income groups whose younger and more productive adult members normally provide greater economic returns to the family compared to their elderly counterparts. On the other hand, among private facility users, the young adults are probably still dependents, pursuing higher education or other non-income generating concerns--or simply, they are most unlikely to be part of the labor force. In other words, where family income and wealth depend on the middle and older generations, the elderly's life and health becomes of utmost importance to his family--although this does not discount special cases in which young ingrates find the elderly worth more dead than alive due to bequest.

Another reason could be that, given a young and growing Philippine population, the government medical system finds itself catering more to young adults instead of the aged.

A third reason may be that, among private facilities users, older folks (or their families) tend to recognize symptoms of illnesses earlier and, thus, are likely to bring it to medical attention more quickly, while their counterparts in government facilities may find difficulty doing so.

Family Size. In the case of child care, family size influences the choice of public health care facilities. Having more people in the family means more time and individuals to care for sick members at home, thus compensating or substituting for additional days of hospital care (or additional out-patient visits).

Quality. Quality, as measured by the kind of attendance a physician gives to an illness, positively influences the choice toward private facilities. This is true for both child and adult care.

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23. Fifteen years old and above.

Table 28
The Binomial Logit Model of Provider Choice in Child and Adult Curative Care for the Philippines

Variable	Child		Adult	
	Coefficient	t-ratio	Coefficient	t-ratio
GOVFAC*				
Intercept	-0.11394	-0.341	-1.94456	-3.599
Log of Price	-0.05622	-1.089	-0.01839	-0.324
(Log of Price) X Quartile 1	0.01874	0.298	0.02735	0.406
(Log of Price) X Quartile 2	0.03900	0.753	-0.00219	-0.039
(Log of Price) X Quartile 3	-0.02771	-0.513	0.03900	0.727
Log of Income	-0.06172[b]	-2.057	-0.04084	-1.166
Age	-0.07575	-1.266	0.03674[a]	1.814
Age Squared	0.00271	0.600	-0.00038[a]	-1.726
Sex	0.12444	0.914	0.08164	0.502
Family Size	-0.05039[a]	-1.812	0.00547	0.194
Education	0.21062	1.409	0.01440	0.068
Location	-0.13087	-0.871	0.08202	0.461
Seriousness	-0.00620	-0.033	-0.31507[a]	-1.808
Quality	-0.39577[b]	-2.370	0.23069	1.224
Travel Time	0.05924[c]	10.165	0.03557[c]	7.476
Sample Size	1,209		930	
Model Chi-Square (14)	198.420		149.030	
Significance Level for Test	3.22E-14		3.22E-14	
Predicted Probability of Dependent Variable	0.32		0.32	

a Significant at 0.10 level
b Significant at 0.05 level
c Significant at 0.01 level

*GOVFAC: Government Facilities
(Government hospitals, rural health units/puericulture centers or barangay health stations)

Table 28 (continued)

Variable	Child Coefficient	Child t-ratio	Adult Coefficient	Adult t-ratio
PRIVFAC*				
Intercept	-6.46929	-9.313	-5.27927	-5.081
Log of Price	0.15155[a]	1.929	0.04109	0.528
(Log of Price) X Quartile 1	0.07783	0.786	0.00677	0.070
(Log of Price) X Quartile 2	-0.00255	-0.034	0.00636	0.088
(Log of Price) X Quartile 3	-0.04832	-0.698	-0.02054	-0.317
Log of Income	0.17018[c]	2.958	0.08931	1.514
Age	0.16094[a]	1.713	-0.04799[a]	-1.745
Age Squared	-0.01194[a]	-1.654	0.00052[a]	1.753
Sex	-0.14438	-0.683	-0.28733	-1.298
Family Size	0.02087	0.515	-0.04346	-1.106
Education	-0.02544	-0.105	0.05829	0.224
Location	-0.56202[b]	-2.548	-0.07428	-0.315
Seriousness	-0.61460[b]	-2.112	0.30051	1.307
Quality	4.96921[c]	14.063	5.82115[c]	8.020
Travel Time	-0.00123	-0.588	-0.00197	-0.608
Sample Size	1,209		930	
Model Chi-Square (14)	572.910		431.520	
Significance Level for Test	3.22E-14		3.22E-14	
Predicted Probability of Dependent Variable	0.18		0.18	

a Significant at 0.10 level
b Significant at 0.05 level
c Significant at 0.01 level

*PRIVFAC: Private Facilities
(Private hospitals or clinics)

Table 28 (continued)

Variable	Child Coefficient	Child t-ratio	Adult Coefficient	Adult t-ratio
HOME				
Intercept	0.02649	0.074	1.52719	2.572
Log of Price	-0.08400	-1.454	0.00749	0.115
(Log of Price) X Quartile 1	0.03907	0.563	-0.04826	-0.634
(Log of Price) X Quartile 2	0.05029	0.872	0.00146	0.022
(Log of Price) X Quartile 3	0.12681[b]	2.112	-0.08091	-1.280
Log of Income	0.01244	0.378	-0.00046	-0.012
Age	0.03215	0.501	-0.02486	-1.120
Age squared	0.00207	0.428	0.00025	1.014
Sex	-0.01397	-0.096	0.13993	0.769
Family Size	0.04088	1.394	0.01408	0.453
Education	0.05786	0.359	0.23412	0.920
Location	0.66533[c]	3.829	0.33478	1.618
Seriousness	0.37655[a]	1.848	0.12162	0.631
Quality	-3.72098[c]	-15.297	-3.70069[c]	-15.997
Sample Size	1,209		930	
Model Chi-square (13)	508.050		479.360	
Significance Level for Test	3.22E-14		3.22E-14	
Predicted Probability of Dependent Variable	0.50		0.50	

a Significant at 0.10 level
b Significant at 0.05 level
c Significant at 0.01 level

Given the size of the family, the higher the total family income, the less likely would a child be sent to a government facility. The implication is that government facilities are considered to be of inferior quality.

B. *Price Elasticities Across Quartiles*

Results for the country as a whole show that demand for health care is generally inelastic with respect to price and that price elasticities (absolute value) do not become greater as income falls (Table 29). However, regional results tell a different story.

Regional price elasticities for child and adult care were also computed (Tables 30 and 31). A dash mark means that estimation of the demand model for a particular region for a specific facility could not culminate in convergence due either to a singular determinant (caused by having the same values in one or more of the explanatory variables of a certain facility and region) or to the probabilities (left hand side) clustered around zero or one.

It seems that the same findings on Philippine estimation can be said of regional estimation, but not for Region XII as far as the choice of private facilities in child care is concerned (Table 30). Price elasticity in this region is greater than one (in absolute value). Moreover, price sensitivity tends to increase (except for Quartile 3) as one goes down the income ladder. Hence, Region XII does not contradict the hypothesis that increasing prices would decrease the welfare of the poor more than the rich.

The special dummy variables, if significant, indicate that income brings about change in price sensitivity. In other words, there is a difference in price elasticities between income groups. Regions I (adult care) and VIII (child care) confirm this hypothesis in the case of government facilities, and Regions I (adult care) and IV (child care) in the case of private facilities. The implication is that one should not charge the same user fees across the board (i.e., across income classes) because the responsiveness of demand to price differs between income groups.

VI. CONCLUSIONS

Both economic and non-economic factors significantly affect demand for health care, but there are more non-economic factors that do so. This indicates the need for a multi-dimensional approach to studying demand.

In the regions, demand for health care is responsive to price changes. This means low revenue potential for regions which raise prices because the demand for health care falls as the price increases.

Finally, sensitivity to price changes in a specific region increases as income decreases. This makes user fees regressive. Moreover, in a number of regions, there is a difference in price elasticities between income groups. The policy implication is that across-the-board (i.e., across income groups) changes in price must be avoided as each income class responds differently. Instead, a sliding scale fee or price discrimination must be used to avoid hurting the poor's access to health care.

Table 29
Price Elasticities by Quartile for the Philippines

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Child Curative Care				
GOVFAC*	-0.00256	0.00029	-0.00853	-0.00227
PRIVFAC**	0.00869	0.00453	0.00411	0.01141
HOME	-0.00407	-0.00335	0.00227	-0.00643
Adult Curative Care				
GOVFAC*	0.00609	-0.01399	0.01401	-0.01251
PRIVFAC**	0.03924	0.03891	0.01684	0.03369
HOME	-0.02039	0.00448	-0.03671	0.00374

*GOVFAC : Government Facilities
(Government hospitals, rural health units/
puericulture centers, or barangay health stations)

**PRIVFAC: Private Facilities
(Private hospitals or clinics)

Table 30
Price Elasticities for Child Curative Care by Quartile and by Region

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
GOVFAC*				
Philippines	-0.00256	0.00029	-0.00853	-0.00227
NCR	-0.10490	0.10525	-3.30773	-0.24437
Region I	-0.23521	0.05909	-0.05601	0.00000
Region II	0.74251	1.03926	0.76173	1.31253
Region III	0.58771	0.05418	-0.24204	-0.00578
Region IV	-0.32998	-0.06261	-0.20304	-0.38298
Region V	-0.00194	-0.24694	-0.30580	-0.35791
Region VI	-0.23277	-0.14396	0.09107	0.04500
Region VII	-0.08353	-0.17406	-0.07535	-0.32941
Region VIII	-0.14419	-0.15489	0.24800	0.15225
Region IX	-0.59834	0.16938	0.46267	-0.31242
Region X	-0.09190	0.01626	-0.04484	-0.17981
Region XI	-0.39435	0.05353	-0.41716	-0.42269
Region XII	0.20263	0.19714	0.20106	-4.38445
PRIVFAC**				
Philippines	0.00869	0.00453	0.00411	0.01141
NCR	0.14439	-0.19816	2.73273	0.07759
Region I	-	-	-	-
Region II	-	-	-	-
Region III	0.75314	0.47943	0.58183	0.08565
Region IV	0.48828	0.52863	0.59923	0.87497
Region V	-0.17149	-0.25579	-0.06875	-0.06289
Region VI	0.84677	0.62317	0.14553	0.28327
Region VII	2.82101	-0.28149	1.20582	-0.57578
Region VIII	-	-	-	-
Region IX	-	-	-	-
Region X	1.01237	4.03632	-5.46066	15.03979
Region XI	-	-	-	-
Region XII	-6.00338	-5.39387	-8.01648	-3.03067

*GOVFAC : Government Facilities
(Government hospitals, rural health units/
puericulture centers, or barangay health stations)

**PRIVFAC: Private Facilities
(Private hospitals or clinics)

Table 30 (continued)

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
HOME				
Philippines	-0.00407	-0.00335	0.00227	-0.00643
NCR	-	-	-	-
Region I	0.04863	0.00483	0.03308	-0.00214
Region II	0.24210	-0.10479	0.11096	-0.17383
Region III	-0.62663	-0.00667	0.18833	-0.04477
Region IV	0.12809	-0.05060	-0.07954	-0.23782
Region V	0.02224	0.19557	0.12192	0.09006
Region VI	-0.30417	-0.29911	-0.28144	1.79640
Region VII	-0.11263	-0.02519	-0.05324	-0.02262
Region VIII	0.07587	-0.00012	-0.03219	0.02765
Region IX	-3.64858	-1.14126	-1.03243	-6.71114
Region X	-0.00794	0.24603	0.08958	0.11442
Region XI	-0.02962	-0.02448	0.57951	0.75871
Region XII	-0.06304	-0.02830	0.05345	0.88153

Table 31
Price Elasticities for Adult Curative Care by Quartile and by Region

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
GOVFAC*				
Philippines	0.00609	-0.01399	0.01401	-0.01251
NCR	0.89307	0.86725	0.86725	0.49008
Region I	-0.36070	-0.01339	0.03231	0.08616
Region II	-0.29073	-0.12648	-1.85693	-1.05240
Region III	0.41410	0.53537	-0.74266	1.02810
Region IV	-0.91221	-0.26177	-0.09529	-0.28650
Region V	0.37681	0.05644	-0.06058	-8.25868
Region VI	1.31313	0.45774	0.14587	-0.60363
Region VII	0.39525	0.15845	0.18805	0.16823
Region VIII	-0.02033	-0.29616	0.38617	-0.45400
Region IX	-0.09027	0.02725	0.61230	0.44503
Region X	0.00347	0.00001	0.08906	0.06536
Region XI	-	-	-	-
Region XII	-16.52856	-15.53166	-16.44484	-25.00063
PRIVFAC**				
Philippines	0.03924	0.03891	0.01684	0.03369
NCR	0.02128	-0.05321	-0.37529	-0.08838
Region I	0.69535	0.34437	1.27597	0.60012
Region II	1.02503	4.08654	1.24902	-1.04992
Region III	0.24737	0.05856	0.63191	0.70097
Region IV	1.13359	0.53241	0.24644	0.14667
Region V	-	-	-	-
Region VI	-	-	-	-
Region VII	-	-	-	-
Region VIII	-15.75201	-0.55838	-5.15953	-12.90034
Region IX	-10.67319	-5.07771	-2.37140	-6.41848
Region X	-2.56476	-3.25813	-1.98051	-1.54052
Region XI	-	-	-	-
Region XII	-	-	-	-

*GOVFAC : Government Facilities
(Government hospitals, rural health units/
puericulture centers, or barangay health stations)

**PRIVFAC: Private Facilities
(Private hospitals or clinics)

Table 31 (continued)

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
HOME				
Philippines	-0.02039	0.00448	-0.03671	0.00374
NCR	-0.14010	0.02780	0.07308	0.51697
Region I	0.01873	0.05329	-0.23209	-0.41407
Region II	0.21360	-0.72862	-0.21458	-0.49669
Region III	-0.09377	-0.01048	0.20436	-0.06189
Region IV	-3.65584	-0.26809	-0.36082	-0.36041
Region V	0.20117	0.06469	-0.04338	0.07928
Region VI	-0.37059	-0.20297	-0.15012	-0.17100
Region VII	-	-	-	-
Region VIII	-	-	-	-
Region IX	-	-	-	-
Region X	0.05408	0.01656	-0.24926	-0.28819
Region XI	-0.04205	-0.02340	-0.20902	-0.01387
Region XII	-	-	-	-

A problem with targeting the poor (to charge them less) is identification. Sometimes it is difficult to know whether a person or a family is poor. One way of discriminating price is to charge people differently based on where they live. Since the poor tend to reside in the same neighborhood, a geographical basis of identifying the poor has been offered as an alternative to solving the shortcomings of sliding scale fees.

APPENDIX A

RURAL HEALTH UNIT PERSONNEL COMPLEMENT AS REQUIRED BY REPUBLIC ACT 1891

Population Size of Municipality	RHP	PHN	RHM		RSI
2,000 and less	-	-	1		1
2,001 - 5,000	-	1	1	or	1
5,001 - 10,000	1	1	1		1
10,001 - 20,000	1	1	2		1
20,001 - 30,000	1	2	2		1
30,001 - 40,000	2	2	2		2
40,001 - 50,000	2	2	3		3
50,001 and over	2	4	4		3

RHP: Rural Health Physician
PHN: Public Health Nurse
RHM: Rural Health Midwife
RSI: Rural Sanitary Inspector

APPENDIX B

REORGANIZATIONS IN THE DEPARTMENT OF HEALTH STRUCTURE FROM THE PERSPECTIVE OF HEALTH SERVICE DELIVERY

Year	Key Features
1954	- Provided for strengthened rural health and dental services and created rural health units in each municipality to be headed by the municipal health officer (MHO). Most of the preventive and curative health services, including administrative functions, were mainly rendered by the physician with the nurse and midwife assuming only subordinate auxiliary roles.
1958	- Creation of the regional offices for field operations so as to decentralize health and medical services. Each regional office consisted of a staff of consultants in special fields, a health training center, a regional laboratory and an administrative unit. Administrative services were placed under the Central Office.
1963	- Creation of the Bureau of Dental Health Services which centralized dental health services in the country.
1975	- Launched the Restructured Health Care Delivery System (RHCDS) which provided for the delivery of a package of primary health care services, emphasized out-patient consultation and ambulatory treatment, and expanded the duties of auxiliary personnel (e.g., midwives, barangay health workers). - Barangay health stations (BHS) were gradually established in the barrios and were manned by resident midwives and barangay health workers (BHWs). - Hospitals, rural health units (RHU) and sanitaria in a province were placed under the administrative direction, supervision, and control of the Provincial Health Officer (PHO). - Allowed RHUs located far from hospitals to put up 5 beds to cater to their immediate hospital needs and to further extend early medical care services.

1982

- Integration of health and medical services at the provincial level.

- Conversion of vertical programs (such as Malaria Service, Schistosomiasis Control Service, Nutrition Service, and Family Planning Service) into pure staff offices. Hence, field health personnel were absorbed by the new Integrated Provincial Health Office (IPHO).

- Decentralization of program administration and financial planning and management down to the provincial level.

- Integration of the regional mental hospital and the regional laboratory with the nearest medical center or regional hospital.

- Medical centers and regional hospitals made as focal points of the Residency Training Program with the provincial hospital component of the IPHO undertaking in-service training programs to service the needs of the province.

Sources:

Azurin, Jesus C. Primary Health Care: Innovations in the Philippine Health System, 1981-1985. 1988.

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APPENDIX C

GUIDELINES FOR CATEGORIZATION ACCORDING TO SERVICE CAPABILITY THRU LICENSURE

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1) Primary
   - Medicine
   - OB-Gyne
   - Pediatrics

2) Secondary
   - Medicine
   - OB-Gyne
   - Pediatrics
   - Surgery

3) Tertiary Provincial
   - Dept. of Medicine
   - Dept. of Surgery
   - Dept. of Pediatrics
   - Dept. of OB-Gyne
   - Anesthesia Service
   - Laboratory Service
   - Radiology Service

4) Tertiary Regional
   - Dept. of Medicine
   - Dept. of Surgery
   - Dept. of Pediatrics
   - Dept. of OB-Gyne
   - Anesthesia Service
   - Laboratory Service
   - Radiology Service
   - Dept. of EENT
   - Dept. of Orthopedics
   - Dept. of Laboratory
   - Research and Training

5) Tertiary Medical Center
   - Dept. of Medicine
   - Dept. of Surgery
   - Dept. of Pediatrics
   - Dept. of OB-Gyne
   - Anesthesia Service
   - Laboratory Service
   - Radiology Service
   - Dept. of EENT
   - Dept. of Orthopedics
   - Dept. of Laboratory
   - Dept. of Urology
   - Dept. of Psychiatry
   - Dept. of Neurology
   - Nuclear Medicine Service
   - Research and Training

Source: Department of Health (DOH), Bureau of Medical Services Annual Report 1985-1986.

APPENDIX D

BASIC MEDICAL SPECIALTIES AND SUB-SPECIALTIES

A. Basic Specialties
   1) Internal Medicine
   2) Pediatrics
   3) Surgery
   4) OB-Gyne

B. Sub-specialties
   1) Under Internal Medicine
      a) Urology
      b) Neurology
      c) Cardiology
      d) Nephrology
      e) Pulmonary Medicine
      f) Infectious Diseases
      g) Nuclear Medicine

   2) Under Surgery
      a) Orthopedic Surgery
      b) Neuro-surgery
      c) Urology
      d) EENT
      e) Nephrology

   3) Rehabilitative Medicine (generally deals with orthopedic patients)

Source: Interview with Dr. Vicky Espina-Mora, November 16, 1988.

APPENDIX E

STAFF SUPPORT SERVICES UNDER THE OFFICE FOR PUBLIC HEALTH SERVICES AND THEIR RESPECTIVE PROGRAMS AND PROJECTS

I. Maternal and Child Health Services: formulates plans, policies, programs, standards and strategies related to maternal and child health; and conducts studies and researches relative to health services for mothers and children.. Its aim is to prevent morbidity and mortality among mothers and children through the following projects and programs:

A. Expanded Program on Immunization (EPI)
: All children under one year old are targetted for immunization against six (6) childhood diseases such as tuberculosis, diptheria, polio, pertusis, measles and tetanus neonatorium.

B. Maternal Care Program
: Its objective is to make pregnancy and childbirth safe for mothers and their children. Improved performance have been attained through the use of Home-based mother's Records.

C. Control of Diarrheal Disease Program
: The control of the disease is undertaken among children five (5) years old and below through the use of oral rehydration therapy (ORT).

D. Under Six Care Program
: Monitoring of the growth and health status of children from birth until five (5) years old is undertaken to prevent severe malnutrition and other childhood diseases.

E. Breast Feeding Promotion Program
: It discourages bottle feeding through the promulgation of the Milk Code which provides the guidelines, procedures and organizational structure to carry out information dissemination and the establishment of control and monitory groups.

F. Acute Respiratory Infection (ARI) Program
: It seeks to reduce the outbreak of pneumonia which is the leading cause of mortality for Filipino children under 5 years of age.

II. Tuberculosis Control Service: formulates plans, policies, programs, standards and techniques for controlling morbidity and mortality from tuberculosis; and provides training and advisory services related to tuberculosis. Its aim is to eradicate the disease through a national control program by the use of the short course chemotherapy (SCC) and by the use of sputum positive as the screening device. X'ray positives are treated with a standard treatment regiment (STR).

III. Malaria Control Service: formulates plans, policies and programs relative to the control of malaria; and provides consultative training and advisory services. Malaria control is a nationwide program involving seventy-three (73) provinces out of the total seventy-five (75) provinces through vector control, case finding and treatment, and an information-educational campaign. Because of the peculiarity of handling disease transmission which requires special skills, implementation has been shifted from volunteerism to hiring of skilled personnel and has been placed directly under the control and supervision of the Provincial Health Offices (vertical program at the provincial level).

IV. Schistosomiasis Control Service: formulates short and long-term schistosomiasis control plans for endemic areas; and provides field support services to the twenty-three (23) endemic provinces in the form of drugs and laboratory supplies. Case finding, treatment, health education and environmental sanitation are conducted in all endemic areas, with snail-control activities in limited places receiving foreign assistance.

V. Nutrition Service: formulates plans, policies, programs, standards and techniques relative to nutrition services and in the context of primary health care; provides consultative training and advisory services to implementing agencies; and conducts researches and studies related to nutrition. Its main objective is to help promote the nutritional well-being of the vulnerable groups of the population and to reduce the prevalence rate of major nutritional deficiency problems through the following programs:

A. Growth monitoring "Operation Timbang" : screening of pre-schoolers nationwide
B. Vitamin A Project } : micro-nutrient
C. Iron Deficiency Control Program } supplementation
D. "Akbayan sa Kalusugan" (ASK) }
E. Targetted Food Assistance Program (CARE and IFAD) } : food supplementation

VI. Family Planning Service: formulates plans, policies, programs and standards relative to family planning and in the context of health and family welfare; and provides consultative training and research related to family planning. It aims to contribute to the reduction of infant and maternal morbidity and mortality as well as to promote family welfare through proper spacing of childbirth, with special attention given to high-risk mothers. Full information are provided on medically approved, morally and legally acceptable, effective and affordable health family planning methods to serve as the basis for a couple's choice.

VII. Dental Service: formulates plans and policies related to dental health services; and conducts training and advisory services to implementing agencies. Its major concerns are the promotion and maintenace of oral health among children, pregnant mothers and other adults through promotive, preventive, curative and consultative services. It covers government hospitals, schools and rural health units.

VIII. Communicable Disease Control Service: formulates plans, policies, programs, standards and techniques for controlling communicable diseases such as leprosy, sexually transmitted diseases, and filariasis. It has three (3) programs:

A. Leprosy Control Program
   : It is a vertical program consisting of eight (8) sanitaria, six (6) stationary skin clinics and fifteen (15) travelling skin clinics. It seeks to treat and cure all cases through the use of multiple drug therapy (MDT). Part of the program also includes the gradual phaseout of treatment at the sanitaria by enhancing the effectiveness of out-patient care.

B. Sexually transmitted Disease Program
   : It is implemented by forty four (44) Social Hygiene Clinics distributed to the different cities and provinces and assisted by rural health units. The program is currently drafting a national Acquired Immunity Deficiency Syndrome (AIDS) control plan after consultations with other government agencies, the World Health Organization (WHO) and foreign experts. Also, local AIDS committees are being organized nationwide to develop and implement community-based approaches in the control and prevention of AIDS in the country.

C. Filariasis Control Program
   : It aims to minimize transmission of filariasis in endemic areas (mostly in Regions VI, VII, and VIII) through aerial and spatial spraying and general environmental sanitation. Only ten (10) out of the forty seven (47) endemic provinces are undergoing

limited control activities (case finding, treatment and vector control) due to inadequate logistical support.

IX. Environmental Health Service: formulates plans, policies, programs and standards relative to environmental health sanitation; provides consultative training and advisory services to implementing agencies; and conducts studies and researches related to environmental health. It is concerned with the control of all physical, chemical and biological processes, influences and factors that, directly or indirectly, affect the physical and mental health of the population. There are seven (7) projects under this service which seeks to prevent diseases caused by poor sanitation of the environment, including water and food-borne diseases like typhoid, dysentery and cholera. These projects are the following:

A. Water Supply Sanitation
B. Toilet Construction/Improvement Program
C. Food Sanitation Program
D. Insect and Rodent Control
E. Public Place Sanitation
F. Housing Sanitation
G. Environmental Pollution

X. Non-communicable Disease Control Service: formulates plans, policies, programs and standards related to the control of non-communicable diseases such as mental health, cardiovascular diseases, cancer and occupational health diseases.

A. Cancer Control Program
   : seeks to control cancer through early detection and healthier lifestyles and by way of health education and public information.
B. Cardiovascular Diseases Control Program
   : aims to reduce morbidity and mortality from cardiovascular and other diseases of the heart. It also seeks to reduce the levels of known risk factors of heart diseases and hypertension such as cigarette smoking, high salt intake and overweightness through continuing health education and public information.

Source: Department of Health (DOH). Program Budgeting Report. 1988.
Department of Health (DOH) brochure. 1988.

APPENDIX F

OTHER PROGRAMS OF THE DEPARTMENT OF HEALTH

A. Primary Health Care Program
   : It is an approach to make essential health services available to people through their own initiative and participation in a way acceptable to them and at a cost the community can afford. It focuses mainly on preventive services and hopes to achieve its objectives by strengthening the formal health network through training and multi-sectoral collaboration.

B. Program on Drugs and Pharmaceuticals
   : It aims to strengthen food and drug regulation for greater safety, quality and efficiency. It also exerts efforts to expand the government rate in production and distribution of drugs in order to make drugs and pharmaceuticals affordable and available to the public.

C. Food and Drug Safety Program
   : It seeks to protect the health and safety of consumers by regulating the manufacture and sale of cosmetics and household products containing hazardous substances.

D. Occupational Health Program
   : It seeks to improve the health, hygiene and safety of workers and to lessen the risk of work-related exposure to industrial hazards.

E. Quarantine Program
   : It seeks to prevent the spread of diseases subject to international health regulations (i.e., quarantinable diseases) by examining aliens who are immigrating here and by immunizing those who are travelling overseas. The program also formulates policies regarding the sanitation of vessels, aircrafts, ports and airports.

F. Health Infrastructure Program
   : It hopes to improve, in terms of floor area, layout, and other physical facilities, the Department of Health central headquarters and the health centers/barangay health stations that are dilapidated. Some regional training centers, regional/provincial hospitals, and other medical centers which require infrastructure support will also be rehabilitated.

Source: Department of Health (DOH) brochure 1988.

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